July 29, 2005

Peter Van Alyea
Redwood Oil Company
455 Yolanda Ave., Suite 200
Santa Rosa, CA 94502

Re: Well Installation Report
Redwood Oil Bulk Fueling Facility
1100 Bennett Valley Road
ECM Group Project #98-511-21

Dear Mr. Van Alyea:

ECM Group has prepared this summary report with the results of the well installation at the above referenced site (Figure 1, Appendix A).

INTRODUCTION

One multi-level well (MW-15) and two conventional monitoring wells (MW-16 and MW-17) were installed at the above-referenced site between March 22 and April 4, 2005. The purpose of the well installation was to investigate the impacts to groundwater at the site. Well locations are provided on Figure 2, Appendix A.

Scope of work

The scope of work for the well installation was outlined in the November 14, 2003 workplan[1] and the October 22, 2004 addendum to the workplan.[2]

The following outlines the scope of work and procedures used for this investigation:

1. Prepare a site-specific safety plan for this investigation.

2. Install three ground water monitoring wells: one multi-level well to a depth of approximately 150 ft bgs, and two conventional wells to a depth of approximately 40 ft bgs, in the locations shown on Figure 2, Appendix A. Install sample ports at approximately 30 - 40 ft bgs, 60 - 70 ft bgs, 95 - 105 ft bgs, and 140 - 150 ft bgs in the multi-level well.

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[1] 2003, ECM, Workplan for Deep Monitoring Well Installation, Redwood Oil Bulk Service Station, 1100 Bennett Valley Rd., Santa Rosa, CA, November 14, 2004, 14 pages, 5 Appendices.

[2] 2004, ECM, Addendum to Workplan for Deep Monitoring Well Installation, Redwood Oil Service Station, 1100 Bennett Valley Rd., Santa Rosa, CA, October 22,2004, 5 pages, 1 Appendix.

3. Develop the wells.

4. Survey the wells.

5. Collect ground water samples from the wells. Analyze the ground water samples for petroleum hydrocarbons and fuel oxygenates.

6. Report the results.

BACKGROUND

Site History

The following site history information was obtained from Redwood Oil Company files and ECM project files.

The station was built and operated by Union Oil during the 1960s. The station was leased by John Gantner during the 1970s until it was purchased by Redwood Oil in 1979.

The site is currently an operating Chevron service station. Prior to UST replacement activities in February and March of 1998, four USTs were present at the site. The size of the former USTs, composition, and product type, are shown below:

Tank Capacity (gallons)	Tank Type	Product
10,000	Steel	unleaded gasoline
10,000	Steel	premium unleaded gasoline
2,000	Steel	regular leaded gasoline
550	Steel	waste oil

The pumps at the station were replaced in 1988, along with a portion of the below-grade piping. Tank test results were available from three test events during 1990 and early 1991. The tanks were tested tight on each occasion, except for the premium unleaded tank during the February,

1990 test. All three tanks retested tight in March, 1990.[3,4,5]

In February and March, 1998, the site USTs, product piping, and dispensers were removed and replaced with an upgraded UST system.

Previous Site Investigations and Remedial Activities

In November, 1990, a soil vapor survey was conducted at the site as part of a preliminary environmental assessment.[6] A photoionization detector (PID) instrument was used to measure organic vapor concentrations from seventeen locations on the site. The highest concentration of organic vapor, 550 parts per million (ppm), was detected at a point southwest of the waste oil tank.

On May 15 and 16, 1992, three monitoring wells (MW-1 through MW-3) were installed on-site (Figure 2, Appendix A). Hydrocarbons as gasoline were detected in soil samples collected from each of the wells.

In July 1994, Sierra Environmental Services (SES) supervised the drilling of seven borings (B-1 through B-7) at the site. In October 1994, SES supervised the drilling of six additional borings (B-8 through B-13).[7] Soil samples collected from eight of the thirteen borings contained elevated concentrations of petroleum hydrocarbons. Ground water samples collected from ten of the thirteen borings contained concentrations of petroleum hydrocarbons. Soil boring locations are shown on Figure 2 (Appendix A). Analytical results from soil samples are provided in Table 3, Appendix B.

A continuous free-product recovery unit was installed in monitoring well MW-1 on September 2,

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3 EA Remediation Technologies, Inc., 1990, Report of Tank Tightness Tests, Redwood Oil Service Station #106, 1100 Bennett Valley Road, Santa Rosa, California, February 27,1990, 13 pages.

4 EA Remediation Technologies, Inc., 1990, Report of Tank Testing Results, Redwood Oil Service Station #106, 1100 Bennett Valley Road, Santa Rosa, California, March 14, 1990, 15 pages.

5 Lawrence Tank Testing Inc., 1991, Tank Test Report, Redwood Oil Service Station #106, 1100 Bennett Valley Road, Santa Rosa, California, March 18, 1991, 18 pages.

6 Earthtec Ltd., 1991, Phase I Environmental Assessment, Fairgrounds Chevron Service Station, 1100 Bennett Avenue, Santa Rosa, California, February 12, 1991, 4 pages and 1 appendix.

7 SES, 1994, Consultant's Subsurface Investigation Report: Extent of Hydrocarbons in Soil and Ground Water, Redwood Oil Service Station #106, 1100 Bennett Valley Road, Santa Rosa, California, prepared for Peter Van Alyea, Redwood Oil Company, December 16, 1994, 8 pages and 5 appendices.

1993. Regular water level measurements and product thickness measurements were collected in the wells until their destruction in 1998. Historic water level measurements, product thickness measurements, and product removal information is provided in the March 2, 1998 Monitoring Status Report.[8]

In February, 1998, in preparation for corrective action soil excavation at the site, the existing site monitoring wells were destroyed. In February and March, 1998, the existing site USTs, product piping, and fuel dispensers were removed and replaced with an upgraded system. Approximately 4,000 cubic yards (CY) of soil containing petroleum hydrocarbons were excavated from the site. Details of the excavation activities are discussed in the May, 1998 report.[9]

In September, 1998, two on-site and three off-site monitoring wells (MW-4 through MW-8) were installed at the site. Monitoring well locations are shown on Figure 2, Appendix A. Details of the well installation are provided in the December 8, 1998 Monitoring Well Installation and Monitoring Report.[10]

Five additional monitoring wells (MW-9 through MW-13) and one soil boring (B-14) were installed at the site in June, 2000.[11] Monitoring well/boring locations are shown on Figure 2, Appendix A.

A Corrective Action Plan (CAP) was prepared for this site in February 1999. The CAP recommended installation of an air sparge system at the site. Installation of the air sparge system was completed in July, 2000.[12]

In 1999 an environmental site assessment was conducted for a neighboring site (1016 Bennett

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8 SES, 1998, Ground Water Monitoring Semi-Annual Status Report, Redwood Oil Service Station #106, 1100 Bennett Valley Road, Santa Rosa, California, prepared for Peter Van Alyea, Redwood Oil Company, Sierra Environmental Services, March 2, 1998, 2 pages and 2 attachments.

9 ECM, 1998, Remedial Soil Excavation, 1100 Bennett Valley Road, Santa Rosa, California, prepared for Peter Van Alyea, Redwood Oil Company, May 27, 1998, 10 pages and 4 appendices.

10 ECM, 1998, Monitoring Well Installation and Monitoring Report, 1100 Bennett Valley Road, Santa Rosa, California, prepared for Peter Van Alyea, Redwood Oil Company, December 9, 1998, 10 pages and 5 appendices.

11 ECM, 2000, Monitoring Well/Soil Boring Installation Report, Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California, September 12, 2000, 12 pages and 5 appendices.

12 ECM, 2000, Air Sparge System Installation Report, 1100 Bennett Valley Road, Santa Rosa, California, September 13, 2000, 2 pages and 1 attachment.

Valley, located west and down-gradient of the subject site).[13] Elevated concentrations of hydrocarbons were detected in soil and ground water samples at 1016 Bennett Valley Road. The location of 1016 Bennett Valley Road is shown in Figure 2, Appendix A. Concentrations up to 1,300,000 and 26,000 ppb, for gasoline and benzene respectively, were detected in ground water samples collected from the site. Concentrations up to 1,100 and 0.35 ppm, for gasoline and benzene respectively, were detected in soil samples collected from the site.

On January 29, 2002, one additional off-site monitoring well (MW-14) and four additional off-site borings (B-15 through B-18) were installed at the site. Soil data for all previously installed points is presented in Table 4 (Appendix B). Monitoring well locations and boring locations are shown on Figure 2 (Appendix A).

On April 11th and 12th, 2002, three Cone Penetration (CPT) borings (CPT-1 through CPT-3), and three adjacent hydropunch borings were installed at the site.[14] (Figure 2, Appendix A). On March 4 and 5, 2003, three additional CPTs (CPT-4 through CPT-6) with adjacent hydropunch borings were installed at the site.[15] The CPT borings indicated that subsurface lithology, to approximately 100 ft bgs, is composed primarily of moderate to high-permeability sands and silty sands alternating with low-permeability formations of clays and silts. Cross sections, prepared from CPT logs, are presented as Figures 4, and 5 (Appendix A). Of the 6 CPT/hydropunch points installed, the most heavily impacted samples were collected from CPT-3, installed near the source of the release. Samples from CPT-5 (located in the eastern or upgradient direction), CPT-4 (located in the southern or cross-gradient direction) and CPT-6 (located in the northern or cross-gradient direction) were relatively unimpacted except for the shallow-zone sample (40 ft bgs) collected from CPT-6. Samples from CPT-1, located approximately 250 ft downgradient of the release, also had relatively low impacts.

On December 5, 2003, a ground water extraction (GWE) remediation system was activated at the site. The GWE system consists of three extraction wells with submersible pumps. Groundwater is extracted and passed through activated carbon filters for treatment and permitted discharge.

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13 EnviroNet Consulting, 2000, Phase I Environmental Site Assessment for the Evaluation of Potentially Hazardous Materials, Property Located at 1016 Bennett Valley Road, Santa Rosa, California, EnviroNet Consulting, January 11, 2000, 24 pages and enclosures.

14 ECM, 2002, Subsurface Investigation Report, 1100 Bennett Valley Road, Santa Rosa, California, June 20, 2002, 10 pages and 5 appendices.

15 ECM, 2003, Subsurface Investigation Report, 1100 Bennett Valley Road, Santa Rosa, California, July 7, 2003, 10 pages and 5 appendices.

Topographic and Geologic Setting

The site is located in the City of Santa Rosa, Sonoma County, California, near the Sonoma County Fairgrounds (Figure 1, Appendix A). The topography of the site is relatively flat. The site vicinity is mapped as Holocene and Pleistocene alluvium which is composed of clay, silt, sand and gravel.[16] The closest surface water body is Matanzas Creek, located approximately four-tenths of a mile north of the site. Matanzas Creek flows west into Santa Rosa Creek.[17]

WELL INSTALLATION

One multi level monitoring well (MW-15) and two conventional monitoring wells (MW-16 and MW-17) were installed between March 22, 2005 and April 4, 2005. The wells were installed by RSI (Resonant Sonic International) of Woodland, California, using resonant sonic drilling technology. The resonant sonic drilling methodology is described in detail in an American Society of Testing and Materials (ASTM) document presented in Appendix F. During drilling, a six-inch diameter steel casing was advanced as the borehole was drilled. The steel casing fit tightly into the borehole, sealing the borehole and preventing cross-contamination as the borehole was advanced.

The multi level well was installed between March 22 and April 1, 2005. The CMT system for multi-level well installation is described in detail in Appendix F. The well casing consists of a single flexible casing containing seven individual channels. Sample ports were constructed in the channels, at depths of 30 - 40 ft, 60 - 70 ft, 83 -93 ft, and 140 - 150 ft bgs., at the time of installation. Well construction material (sand and bentonite) may be either pre-packed on the well casing prior to installation in the borehole, or the well casing may be inserted into the borehole, and the sand and bentonite added to desired specifications as the outer steel casing is removed. For the well installations at this site, the well casing was inserted into the borehole, and the sand and bentonite were added as the steel casing was removed. Boring logs, including precise sample port depths and well construction details (depths of sand, bentonite, and grout) are included in Appendix D.

The conventional wells (MW-16 and MW-17) were installed between April 1 and April 4, 2005. The wells were installed to depths of approximately 40 feet bgs and screened between 30 ft and 40 ft bgs. Boring logs, including well construction details, are included in Appendix D.

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16 Wagner, D.L. and Bortugno, E.J., 1982, California Division of Mines and Geology, Geologic Map of the Santa Rosa Quadrangle, California, 1:250,000.

17 USGS, 1980, Topographic map of the 7.5 minute Santa Rosa Quadrangle, 1:24,000.

Boreholes for the wells were logged in accordance with ECM Standard Operating Procedures - Logging (Appendix C). OVM readings were collected from selected soil samples in accordance with ECM Standard Operating Procedures - OVM Readings (Appendix C). Results of OVM readings are recorded on the boring logs (Appendix D).

WELL DEVELOPMENT

The wells were developed on April 19 and 20, 2005 by ECM personnel. The wells were developed in accordance with ECM Standard Operating Procedure - Well Development (Appendix C). Well development field notes are located in Appendix G.

SURVEYING

Top of casing elevations of the three newly-installed wells were surveyed by Barry L. Kolstad, professional land surveyor (P.L.S. 5677), on May 3, 2005. Top of casing elevations are provided in Table 1, Appendix B.

LITHOLOGICAL AND HYDROLOGICAL DATA

Boring logs are included in Appendix D. Lithological data is summarized graphically in cross section in Figures 3 and 4 (Appendix A). The cross-section alignments are shown on Figure 2 (Appendix A). Boring logs compiled during the course of this investigation and previous investigations indicate the soil underlying the site is comprised of lean clay with varying amounts of silt and sand, alternating with higher-permeability formations of sands and silty sand between 20 and 40 ft bgs. Soils between 40 ft and 150 ft bgs, encountered during installation of multi-level well MW-15, were mostly composed of sandy silt, with alternating layers of silty sand and gravel. Cross Section A includes details of the subsurface at locations of newly installed wells MW-15 and MW-16, as well as previously installed CPT-1, CPT-2, CPT-3, and CPT-5. Cross Section B includes details of the subsurface at locations of previously installed CPT-3, CPT-4, and CPT-6.

In June, 2001, a pump test was conducted at the site.[18] The purpose of the pump test was to collect data on site hydrology to be used in the design of a ground water extraction system for the site. Average hydraulic conductivity for the site was calculated at approximately 6.4 to 6.7 ft/day. Measurements collected during past monitoring events at the site indicate that ground water flow is westerly, at an approximate gradient between 0.003 and 0.03 ft/ft.

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[18] ECM, 2001, Pump Test, Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, CA, August 22, 2001, 8 pages and 5 appendices.

GROUND WATER MONITORING

Ground water samples were collected on May 4, 2005, in accordance with ECM Standard Operating Procedure - Multi-Level Well Sampling, and ECM Standard Operating Procedure - Ground Water Sampling. Field data sheets for well sampling are located in Appendix G. Samples were transported under chain of custody to Friedman and Bruya Inc.of Seattle, Washington and analyzed for hydrocarbons as gasoline (TPH[G]), hydrocarbons as diesel [TPH(D)], benzene, toluene, ethylbenzene, xylenes, and fuel oxygenates. Table 2 and Table 3 (Appendix B) provide results of groundwater analysis.

ANALYTICAL RESULTS

Analytic results for all sample ports in MW-15 and well MW-16 are shown graphically on the cross section (Figures 5, Appendix A). Subsurface conditions and contaminant concentrations from well MW-17 were consistent with results from well MW-16 and are not provided in cross section. Analytical results for ground water collected from all wells and sample ports are tabulated in Table 2 and Table 3 (Appendix B). Laboratory analytic reports and chain of custody documents are included in Appendix E.

Gasoline, BTEX compounds, and oxygenates were detected in samples collected from the four sample ports in MW-15. Concentrations were elevated in the 30-40' port and the 140-150' port. Samples collected from wells MW-16 and MW-17 contained very low to low concentrations of BTEX compounds and oxygenates. Gasoline and diesel were not detected in the samples collected from MW-16 and MW-17.

CONCLUSIONS AND RECOMMENDATIONS

Well MW-15 was installed near the source of the release. Groundwater in MW-15, at depths up to 150 ft bgs, is impacted with gasoline, BTEX compounds, and fuel oxygenates. Wells MW-16 and MW-17 were installed offsite in the down-gradient direction. Depth to water in MW-16 and MW-17 is approximately 7 ft bgs. MW-16 and MW-17 are screened between 30 and 40 ft bgs, and were designed to investigate impacts in the higher permeability zone between 20 ft and 40 ft bgs. Samples collected from MW-6 (located adjacent to MW-16, and screened between 5 ft and 20 ft bgs) are consistently highly impacted. The initial samples collected from MW-16 and MW-17 indicate that significant impacts to groundwater do not extend to the 30 to 40 ft zone.

ECM recommends that wells MW-16 and MW-17 be monitored on a semi-annual basis for one year, and that each sample port in MW-15 be sampled quarterly for one year. The monitoring frequency for MW-15 through MW-17 should be reevaluated after one year.

Thank you for allowing ECM Group to provide environmental consulting services to Redwood Oil Company. Please call if you have questions or require additional information.

Sincerely,
ECM Group

David Hazard
Staff Scientist

Jim Green
Professional Engineer #C58482

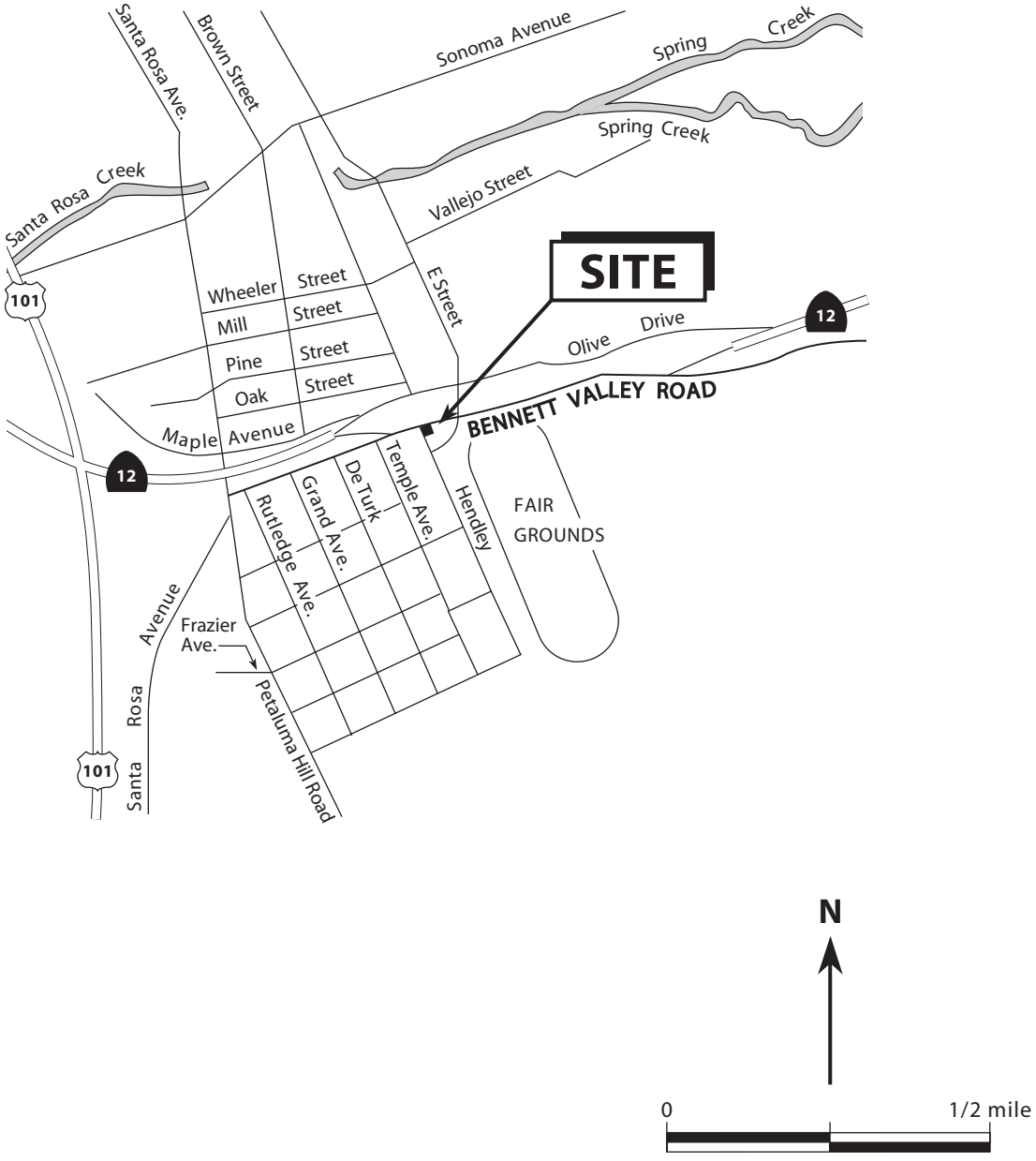
Attachments:

- Appendix A - Figures
- Appendix B - Tables
- Appendix C - ECM Standard Operating Procedures
- Appendix D - Well Completion Details, Soil Classification System Chart, And Boring Logs
- Appendix E - Chain of Custody Documents and Laboratory Analytical Results
- Appendix F - Multi-Level Well System and Resonant Sonic Drilling Reference Material
- Appendix G - Well Development and Ground Water Sampling Field Data Sheets

cc: Joan Fleck, North Coast Regional Water Quality Control Board
John Anderson, Sonoma County Department of Health Services

APPENDIX A

FIGURES



Base map ref: Thomas Bros.

Figure 1. Site Location Map – Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

98-511 [Site loc map] 4/08/03

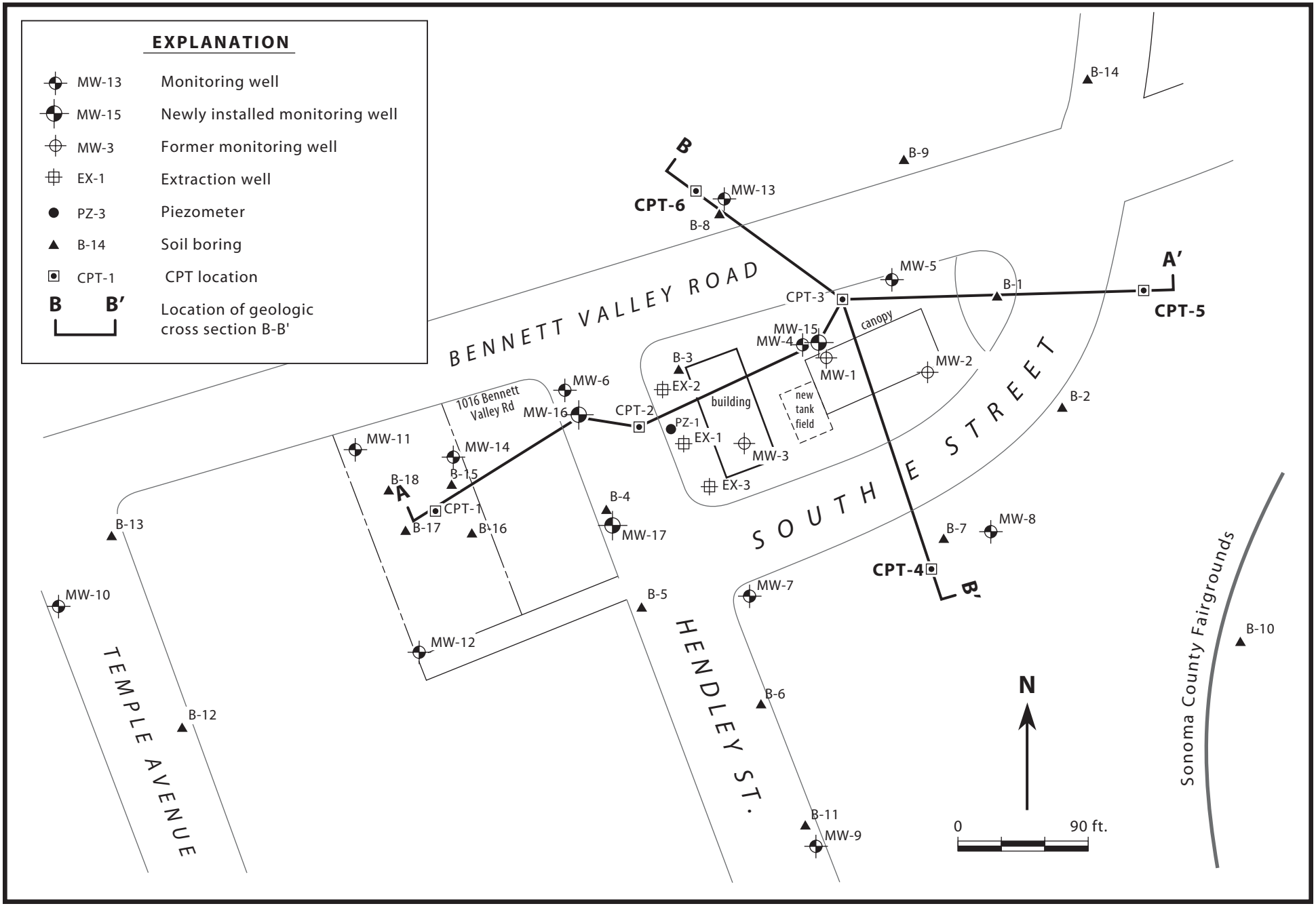
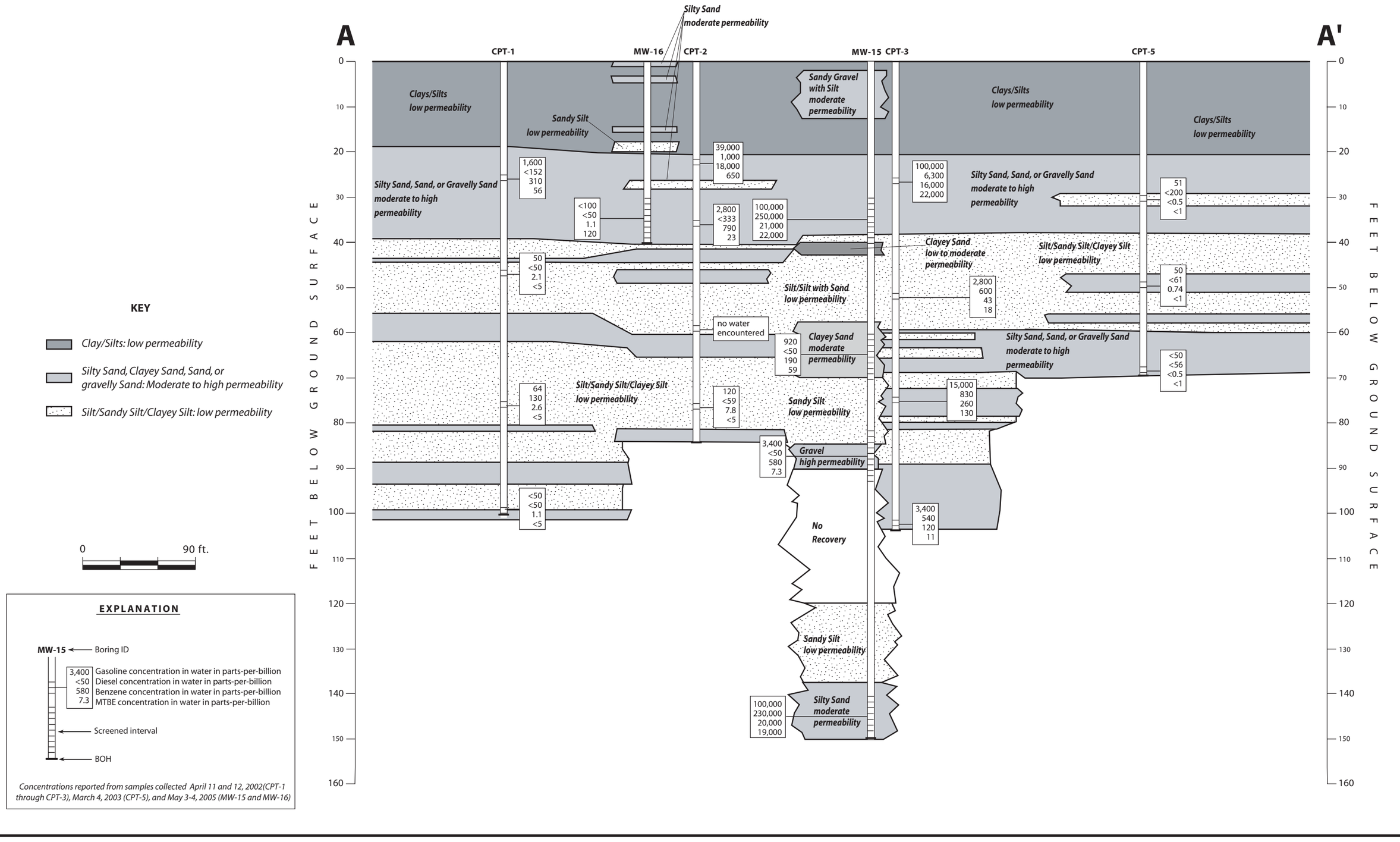


Figure 2. Site Map with Locations of Geologic Cross Sections A-A' and B-B' - Redwood Oil Service Station #106, 1100 Bennett Valley Road, Santa Rosa, California

98-511-21 [Cross Section Locations] 7/11/05



KEY

- *Clay/Silts: low permeability*
- *Silty Sand, Clayey Sand, Sand, or gravelly Sand: Moderate to high permeability*
- *Silt/Sandy Silt/Clayey Silt: low permeability*

0 90 ft.

EXPLANATION

MW-15 ← Boring ID

3,400 Gasoline concentration in water in parts-per-billion
<50 Diesel concentration in water in parts-per-billion
580 Benzene concentration in water in parts-per-billion
7.3 MTBE concentration in water in parts-per-billion

← Screened interval

← BOH

Concentrations reported from samples collected April 11 and 12, 2002(CPT-1 through CPT-3), March 4, 2003 (CPT-5), and May 3-4, 2005 (MW-15 and MW-16)

Figure 3. Geologic Cross-Section A-A' - Redwood Oil Service Station #106, 1100 Bennett Valley Road, Santa Rosa, California

98-511-21 [A-A'] 7/26/05

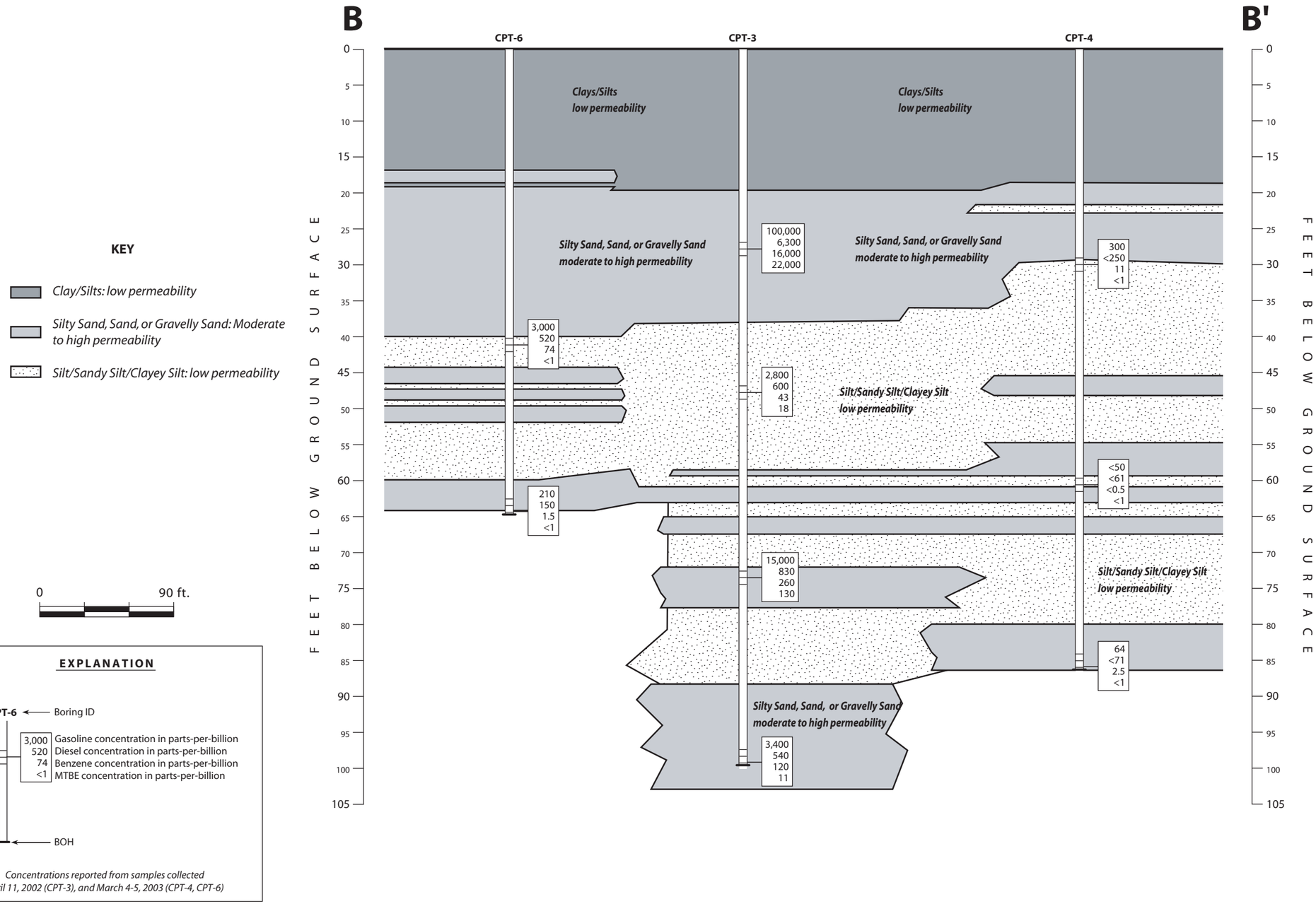


Figure 4. Geologic Cross-Section B-B' - Redwood Oil Service Station #106, 1100 Bennett Valley Road, Santa Rosa, California

98-511-68 [B-B' 5_04] 10/21/04

APPENDIX B

TABLES

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-4	9/18/1998	165.15	5.95	159.20	5-20	4-20	0-4	
	1/4/1999		7.12	158.03				
	3/10/1999		4.37	160.78				
	10/1/1999		7.73	157.42				
	1/5/2000		8.70	156.45				
	3/29/2000		4.88	160.27				
	7/11/2000		7.60	157.55				
	9/29/2000		8.11	157.04				
	12/7/2000		8.52	156.63				
	3/6/2001		6.60	158.55				
	6/21/2001		7.05	158.10				
	9/18/2001		8.47	156.68				
	12/19/2001		7.05	158.10				
	3/20/2002		4.50	163.21				
	6/20/2002	167.71	6.18	161.53				Surveyed for EDF compliance.
	9/20/2002		7.68	160.03				
	12/31/2002		3.42	164.29				
	3/25/2003		4.80	162.91				
	7/1/2003		5.76	161.95				
	10/2/2003		7.61	160.10				
	12/9/2003		7.80	159.91				
	3/2/2004		4.12	163.59				
	6/8/2004		7.00	160.71				
	6/28/2004		7.37	160.34				
	9/9/2004		8.71	159.00				
	12/28/2004		7.84	159.87				
	3/29/2005		3.60	164.11				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-5	9/18/1998	165.22	7.62	157.60	5-20	4-20	0-4	
	1/4/1999		7.61	157.61				
	3/10/1999		4.29	160.93				
	10/1/1999		8.70	156.52				
	1/5/2000		9.28	155.94				
	3/29/2000		5.27	159.95				
	7/11/2000		7.47	157.75				
	9/29/2000		9.05	156.17				
	12/7/2000	165.22	8.04	157.18				
	3/6/2001		5.40	159.82				
	6/21/2001		7.95	157.27				
	9/18/2001		9.45	155.77				
	12/19/2001		5.60	159.62				
	3/20/2002		4.85	162.94				
	6/20/2002	167.79	7.21	160.58				Surveyed for EDF compliance.
	9/20/2002		9.01	158.78				
	12/31/2002		4.35	163.44				
	3/25/2003		5.15	162.64				
	7/1/2003		7.00	160.79				
	10/2/2003		9.00	158.79				
	12/9/2003		8.60	159.19				
	3/2/2004		4.58	163.21				
	6/8/2004		8.18	159.61				
	6/28/2004		9.09	158.70				
	9/9/2004		10.32	157.47				
	12/28/2004		7.19	160.60				
	3/29/2005		4.10	163.69				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-6	9/18/1998	163.49	8.50	154.99	5-20	4-20	0-4	
	1/4/1999		7.88	155.61				
	3/10/1999		3.97	159.52				
	10/1/1999		9.65	153.84				
	1/5/2000		9.70	153.79				
	3/29/2000		5.91	157.58				
	7/13/001		---	---				Monitoring well was inaccessable
	9/29/2000		9.73	153.76				
	12/7/001		---	---				Monitoring well was inaccessable
	3/6/2001		4.37	159.12				
	6/21/2001		8.52	154.97				
	9/18/2001		10.12	153.37				
	12/19/2001		9.93	153.56				
	3/20/2002	166.52	5.29	161.23				Surveyed for EDF compliance.
	6/20/2002		7.95	158.57				
	9/20/2002		9.91	156.61				
	12/31/2002		3.89	162.63				
	3/25/2003		5.59	160.93				
	7/1/2003		7.58	158.94				
	10/2/2003		9.70	156.82				
	12/9/2003		8.70	157.82				
	3/2/2004		5.21	161.31				
	6/8/2004		8.51	158.01				
	6/28/2004		9.93	156.59				
	9/9/2004		11.04	155.48				
	12/28/2004		--	--				Monitoring well was inaccessable
	3/29/2005		3.64	162.88				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-7	9/18/1998	163.33	8.81	154.52	5-20	4-20	0-4	
	1/4/1999		7.18	156.15				
	3/10/1999		4.40	158.93				
	10/1/1999		8.31	155.02				
	1/5/2000		8.79	154.54				
	3/29/2000		4.96	158.37				
	7/11/2000		7.11	156.22				
	9/29/2000		8.68	154.65				
	12/7/2000		8.31	155.02				
	3/6/2001		4.62	158.71				
	6/21/2001		7.70	155.63				
	9/18/2001		9.17	154.16				
	12/19/2001		4.96	158.37				
	3/20/2002	167.01	---	---				Resurveyed for EDF compliance. Monitoring well was inaccessable.
	6/20/2002		7.00	160.01				
	9/20/2002		8.81	158.20				
	12/31/2002		4.17	162.84				
	3/25/2003		5.00	162.01				
	7/1/2003		6.92	160.09				
	10/2/2003		8.70	158.31				
	12/9/2003		8.24	158.77				
	3/2/2004		5.61	161.40				
	6/8/2004		8.12	158.89				
	6/28/2004		9.29	157.72				
	9/9/2004		10.34	156.67				
	12/28/2004		6.02	160.99				
	3/29/2005		4.02	162.99				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-8	9/18/1998	164.37	6.00	158.37	5-20	4-20	0-4	
	1/4/1999		7.84	156.53				
	3/10/1999		2.41	161.96				
	10/1/1999		7.29	157.08				
	1/5/2000		7.57	156.80				
	3/29/2000		3.52	160.85				
	7/11/2000		5.71	158.66				
	9/29/2000		7.42	156.95				
	12/7/2000		7.00	157.37				
	3/6/2001		3.08	161.29				
	6/21/2001		6.22	158.15				
	9/18/2001		7.87	156.50				
	12/19/2001		3.45	160.92				
	3/20/2002	166.93	3.10	163.83				Surveyed for EDF compliance.
	6/20/2002		5.48	161.45				
	9/20/2002		7.30	159.63				
	12/31/2002		2.99	163.94				
	3/25/2003		3.29	163.64				
	7/1/2003		5.20	161.73				
	10/2/2003		7.21	159.72				
	12/9/2003		6.67	160.26				
	3/2/2004		2.38	164.55				
	6/8/2004		6.27	160.66				
	6/28/2004		6.91	160.02				
	9/9/2004		8.15	158.78				
	12/28/2004		5.28	161.65				
	3/29/2005		2.60	164.33				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-9	7/11/2000	162.72	6.28	156.44	5-20	4-20	2-4	
	9/29/2000		7.75	154.97				
	12/7/2000		7.30	155.42				
	3/6/2001		4.34	158.38				
	6/21/2001		6.95	155.77				
	9/18/2001		8.25	154.47				
	12/19/2001		4.66	158.06				
	3/20/2002	166.40	4.70	161.70				Surveyed for EDF compliance.
	6/20/2002		6.41	159.99				
	9/20/2002		7.92	158.48				
	12/31/2002		3.75	162.65				
	3/25/2003		5.71	160.69				
	7/1/2003		6.20	160.20				
	10/2/2003		7.30	159.10				
	12/9/2003		6.78	159.62				
	3/2/2004		4.39	162.01				
	6/8/2004		7.10	159.30				
	6/28/2004		7.66	158.74				
	9/9/2004		8.77	157.63				
	12/28/2004		4.66	161.74				
	3/29/2005		4.05	162.35				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-10	7/11/2000	162.23	8.50	153.73	5-20	4-20	2-4	
	9/29/2000		10.07	152.16				
	12/7/2000		9.47	152.76				
	3/6/2001		4.61	157.62				
	6/21/2001		9.00	153.23				
	9/18/2001		10.50	151.73				
	12/19/2001		5.10	157.13				
	3/20/2002	165.91	5.75	160.16				Surveyed for EDF compliance.
	6/20/2002		8.45	157.46				
	9/20/2002		10.28	155.63				
	12/31/2002		3.53	162.38				
	3/25/2003		6.10	159.81				
	7/1/2003		8.12	157.79				
	10/2/2003		10.10	155.81				
	12/9/2003		8.70	157.21				
	3/2/2004		4.55	161.36				
	6/8/2004		8.73	157.18				
	6/28/2004		9.34	156.57				
	9/9/2004		10.41	155.50				
	12/28/2004		4.74	161.17				
	3/29/2005		3.71	162.20				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-11	7/11/2000	162.86	8.36	154.50	5-20	4-20	2-4	
	9/29/2000		9.96	152.90				
	12/7/2000		9.37	153.49				
	3/6/2001		4.65	158.21				
	6/21/2001		8.78	154.08				
	9/18/2001		10.31	152.55				
	12/19/2001		5.20	157.66				
	3/20/2002	166.54	5.65	160.89				Surveyed for EDF compliance.
	6/20/2002		8.27	158.27				
	9/20/2002		10.21	156.33				
	12/31/2002		4.11	162.43				
	3/25/2003		5.98	160.56				
	7/1/2003		7.94	158.60				
	10/2/2003		10.00	156.54				
	12/9/2003		8.86	157.68				
	3/2/2004		5.14	161.40				
	6/8/2004		8.75	157.79				
	6/28/2004		9.88	156.66				
	9/9/2004		10.98	155.56				
	12/28/2004		6.28	160.26				
	3/29/2005		3.95	162.59				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-12	7/11/2000	162.86	8.49	154.37	5-20	4-20	2-4	
	9/29/2000		10.04	152.82				
	12/7/2000		---	---				Monitoring well was inaccessable
	3/6/2001		---	---				Monitoring well was inaccessable
	6/21/2001		9.04	153.82				
	9/18/2001		10.46	152.40				
	12/19/2001	162.86	7.30	155.56				
	3/20/2002	166.56	5.81	160.75				Surveyed for EDF compliance.
	6/20/2002		8.48	158.08				
	9/20/2002		10.35	156.21				
	12/31/2002		---	---				Monitoring well was inaccessable
	3/25/2003		6.06	160.50				
	7/1/2003		8.12	158.44				
	10/2/2003		10.18	156.38				
	12/9/2003		9.03	157.53				
	3/2/2004		5.09	161.47				
	6/8/2004		8.96	157.60				
	6/28/2004		9.91	156.65				
	9/9/2004		11.06	155.50				
	12/28/2004		6.34	160.22				
	3/29/2005		4.06	162.50				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-13	7/11/2000	164.14	9.63	154.51	5-20	4-20	2-4	
	9/29/2000		10.61	153.53				
	12/7/2000		10.07	154.07				
	3/6/2001		5.22	158.92				
	6/21/2001		9.37	154.77				
	9/18/2001		11.00	153.14				
	12/19/2001		5.72	158.42				
	3/20/2002	167.82	5.97	161.85				Surveyed for EDF compliance.
	6/20/2002		8.67	159.15				
	9/20/2002		10.67	157.15				
	12/31/2002		4.80	163.02				
	3/25/2003		6.22	161.60				
	7/1/2003		8.21	159.61				
	10/2/2003		10.44	157.38				
	12/9/2003		9.50	158.32				
	3/2/2004		6.19	161.63				
	6/8/2004		9.32	158.50				
	6/28/2004		10.98	156.84				
	9/9/2004		12.11	155.71				
	12/28/2004		7.46	160.36				
	3/29/2005		4.41	163.41				

Table 1. Monitoring Well Survey Data, Well Construction Details, and Depth to Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Date	TOC (Ft,msl)	DTW (Ft)	GWE (Ft,msl)	Screen Interval	Sand Pack Interval	Bentonite Interval	Notes
MW-14	3/20/2002	166.97	5.90	161.07	5-20	4-20	0-4	Surveyed for EDF compliance.
	6/20/2002		8.58	158.39				
	9/20/2002		10.51	156.46				
	12/31/2002		4.53	162.44				
	3/25/2003		6.23	160.74				
	7/1/2003		8.17	158.80				
	10/2/2003		10.29	156.68				
	12/9/2003		9.19	157.78				
	3/2/2004		5.62	161.35				
	6/8/2004		9.08	157.89				
	6/28/2004		10.34	156.63				
	9/9/2004		11.47	155.50				
	12/28/2004		6.74	160.23				
	3/29/2005		4.26	162.71				
MW-15 @ 30'	**5/4/2005**	168.09	**8.02**	**160.07**	30 - 40	29 - 41	0 - 29	Surveyed for EDF compliance.
MW-15 @ 60'	**5/4/2005**	168.09	**7.68**	**160.41**	60 - 70	59 - 71	41 - 59	Surveyed for EDF compliance.
MW-15 @ 83'	**5/4/2005**	168.09	**7.95**	**160.14**	83 - 93	82 - 94	71 - 82	Surveyed for EDF compliance.
MW-15 @ 140'	**5/4/2005**	168.09	**8.03**	**160.06**	140 - 150	139 - 150	94 - 139	Surveyed for EDF compliance.
MW-16	**5/4/2005**	166.96	**7.04**	**159.92**	30 - 40	29 - 40	0 - 29	Surveyed for EDF compliance.
MW-17	**5/4/2005**	167.20	**6.98**	**160.22**	30 - 40	29 - 40	0 - 29	Surveyed for EDF compliance.
PZ-1	3/2/2004	168.23	11.56	156.67	5-20	4-20	0-4	Surveyed for EDF compliance.
	6/8/2004		10.42	157.81				
	6/28/2004		15.27	152.96				
	9/9/2004		16.38	151.85				

ft = feet
msl = Mean Sea Level
DTW = Depth to Water
GWE = Ground Water Elevation

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-4	9/18/1998	87,000	16,000	8,500	8,200	1,900	7,700	5,900	
	1/4/1999	79,000	<1,000	13,000	7,500	1,800	8,800	7,800	
	3/10/1999	44,000	<50	7,700	4,400	970	4,100	3,600	
	6/30/1999	17,000	270	2,200	300	490	800	3,000	Sample was flagged. See analytical report for details
	10/1/1999	---	---	---	--	--	--	---	Monitoring well now on semi annual sampling
	1/5/2000	32,000	<50	8,600	770	1,100	2,500	6,000	
	3/29/2000	64,000	3,200	9,500	7,400	1,700	6,100	9,000	Sample was flagged. See analytical report for details
	7/11/2000	14,000	790	4,300	130	680	420	5,100	Sample was flagged. See analytical report for details
	9/29/2000	19,000	<50	3,100	210	570	470	3,900	
	12/7/2000	41,000	<50	3,600	1,700	260	1,400	1,300	
	3/6/2001	25,000	<50	4,300	4,100	420	2,100	860	
	6/21/2001	720	160	140	18	28	12	340	
	9/18/2001	3,900	710	1,100	190	120	340	730	
	12/19/2001	21,000	1,200	5,000	3,200	710	1,800	1,500	
	3/20/2002	<50	<250	<1	<1	<1	<1	200	
	6/20/2002	150	<50	21	5	4	7	87	
	9/20/2002	720	120	34	3.8	3.5	7.1	720	
	12/31/2002	1,300	<50	200	95	22	82	77	
	3/25/2003	380	<125	120	30	7	27	3	
	7/1/2003	450	<50	160	62	14	54	10	
	10/2/2003	400	50	140	37	9	31	2	
	12/9/2003	1,000	64	290	100	26	113	47	
	3/2/2004	650	<50	190	84	21	82	49	
	6/8/2004	<25	260	<0.5	<0.5	<0.5	<1	<1	
	9/14/2004	950	55	120	46	16	67	37	
	12/28/2004	4,400	310	2,200	39	49	73	1,300	
	3/29/2005	3,800	200	350	150	65	320	180	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-5	9/18/1998	160,000	39,000	33,000	20,000	4,000	20,000	15,000	
	1/4/1999	160,000	<50	31,000	22,000	3,100	16,000	8,400	
	3/10/1999	190,000	230	34,000	13,000	3,500	15,000	6,800	Sample was flagged. See analytical report for details
	6/30/1999	130,000	1,700	22,000	15,000	2,500	12,000	4,900	Sample was flagged. See analytical report for details
	10/1/1999	---	---	---	---	--	---	---	Monitoring well now on semi annual sampling
	1/5/2000	170,000	<50	38,000	23,000	3,000	16,000	8,000	
	3/29/2000	130,000	5,000	17,000	9,300	3,500	12,000	6,500	Sample was flagged. See analytical report for details
	7/11/2000	190,000	29,000	33,000	21,000	2,800	13,000	6,500	Sample was flagged. See analytical report for details
	9/29/2000	260,000	<50	28,000	25,000	3,700	18,000	7,700	
	12/7/2000	250,000	<50	21,000	13,000	2,200	12,000	6,500	
	3/6/2001	96,000	<50	54,000	12,000	2,100	9,500	2,300	
	6/21/2001	90,000	6,500	23,000	12,000	2,400	11,000	6,200	
	9/18/2001	88,000	3,100	23,000	12,000	3,000	14,000	3,600	
	12/19/2001	84,000	5,100	25,000	9,600	2,800	12,000	3,300	
	3/20/2002	43,000	6,200	19,000	7,300	1,900	9,800	2,200	
	6/20/2002	94,000	7,800	28,000	11,000	2,200	8,600	3,200	
	9/20/2002	120,000	3,700	30,000	14,000	3,300	15,000	3,000	
	12/31/2002	110,000	10,000	23,000	9,500	3,000	11,000	2,400	
	3/25/2003	83,000	7,800	26,000	8,000	2,800	11,200	1,600	
	7/1/2003	62,000	5,300	33,000	11,000	3,300	13,000	2,200	
	10/2/2003	90,000	8,000	31,000	10,000	3,300	13,100	2,500	
	12/9/2003	110,000	6,700	29,000	8,800	3,100	13,000	1,600	
	3/2/2004	120,000	8,600	38,000	11,000	4,000	13,700	1,000	
	6/8/2004	81,000	5,500	31,000	8,100	2,900	10,000	1,300	
	9/14/2004	97,000	8,700	27,000	7,100	3,100	11,600	1,100	
	12/28/2004	68,000	12,000	17,000	2,400	2,800	12,000	660	
	3/29/2005	120,000	5,000	28,000	6,200	3,200	11,200	720	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-6	9/18/1998	49,000	8,000	10,000	3,200	1,600	5,200	10	Sample was flagged. See analytical report for details
	1/4/1999	11,000	<50	5,900	360	730	800	180	
	3/10/1999	18,000	190	2,800	330	77	930	91	
	6/30/1999	23,000	150	7,000	400	480	770	120	Sample was flagged. See analytical report for details
	10/1/1999	18,000	640	6,300	78	370	190	<250	Sample was flagged. See analytical report for details
	1/5/2000	22,000	<50	8,500	110	350	330	260	
	3/29/2000	15,000	1,200	4,200	380	290	460	<50	Sample was flagged. See analytical report for details
	7/13/2000	15,000	2,300	3,100	180	400	1,300	<13	Sample was flagged. See analytical report for details
	9/29/2000	33,000	<50	9,800	120	530	760	610	
	12/7/008	---	---	---	---	---	---	---	Monitoring Well was inaccessible
	3/6/2001	43,000	<50	30,000	1,300	760	1,300	120	
	6/21/2001	44,000	1,700	18,000	810	1,500	1,800	<1,250	
	9/18/2001	25,000	960	11,000	240	810	780	<1,000	
	12/19/2001	27,000	750	12,000	360	510	480	790	
	3/20/2002	20,000	1,400	16,000	1,300	980	1,310	810	
	6/20/2002	23,000	750	11,000	350	540	330	960	
	9/20/2002	<50,000	570	12,000	<500	510	<1,000	1,500	
	12/31/2002	21,000	440	8,200	270	340	340	2,300	
	3/25/2003	32,000	1,900	14,000	1,100	900	1,170	1,000	
	7/1/2003	19,000	960	14,000	440	550	414	1,400	
	10/2/2003	21,000	1,200	12,000	130	450	163	1,900	
	12/9/2003	3,300	190	1,500	18	44	24	280	
	3/2/2004	840	<50	500	38	40	42	47	
	6/8/2004	1,000	110	500	<5	55	11	<10	
	9/14/2004	<50	<50	<0.5	<0.5	<0.5	<1.5	1	
	12/28/2004	---	---	---	---	---	---	---	Well was inaccessible.
	3/29/2005	6,300	700	1200	160	180	379	29	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-7	9/18/1998	<50	3,000	<0.5	<0.5	<0.5	<1.0	<1	Sample was flagged. See analytical report for details
	1/4/1999	4,200	<50	1,900	81	160	280	35	
	3/10/1999	9,800	<50	<0.50	70	150	390	18	
	6/30/1999	13,000	78	3,000	320	320	670	<125	
	10/1/1999	7,800	2,600	2,700	140	220	420	<100	Sample was flagged. See analytical report for details
	1/5/2000	14,000	<50	4,500	120	300	650	<50	
	3/29/2000	14,000	360	4,100	94	360	220	<50	Sample was flagged. See analytical report for details
	7/11/2000	8,500	560	3,000	53	270	220	12	Sample was flagged. See analytical report for details
	9/29/2000	15,000	<50	3,700	41	290	360	<25	
	12/7/2000	7,000	<50	1,300	83	160	280	<25	
	3/6/2001	13,000	1,200	4,600	110	510	850	<2.0	Sample analyzed for fuel oxygenates. See analytical report for details.
	6/21/2001	12,000	660	2,800	95	350	590	<500	
	9/18/2001	2,600	140	1,000	36	85	110	<50	
	12/19/2001	9,300	600	3,800	76	450	370	<50	
	3/20/2002	—	—	—	—	—	—	---	Well was inaccessible.
	6/20/2002	6,800	730	2,600	34	270	112	<20	
	9/20/2002	14,000	330	4,800	<125	500	540	7.7	
	12/31/2002	9,300	770	2,600	70	240	300	5	
	3/25/2003	3,600	470	1,600	10	120	28	41	
	7/1/2003	600	52	200	18	22	34	49	
	10/2/2003	3,200	480	1,600	23	130	176	31	
	12/9/2003	16,000	170	390	17	24	45	24	
	3/2/2004	4,100	330	1,300	9	47	29	17	
	6/8/2004	2,000	110	860	16	47	46	<10	
	9/14/2004	5,000	110	980	23	84	58.8	6	
	12/28/2004	6,000	920	1,800	27	68	61.1	3.7	
	3/29/2005	1,600	100	350	5	22	8	2	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-8	9/18/1998	<50	<50	3	1	<0.5	<1.0	<1	
	1/4/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	3/10/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/30/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/1/1999	<50	<50	<0.5	<0.5	<0.5	1.2	<5.0	
	1/5/2000	220	<50	7.1	0.7	0.5	1.7	<2.0	
	3/29/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
	7/11/2000	76	<50	4.6	<0.5	<0.5	0.5	<0.5	
	9/29/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
	12/7/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
	3/6/2001	<50	<50	2.8	<0.5	<0.5	<0.5	<2.0	
	6/21/2001	<50	52	6	2.3	1.1	2.6	<5.0	
	9/18/2001	<50	<50	<0.5	0.62	<0.5	<0.5	<5.0	
	12/19/2001	51	84	6	0.8	0.9	2.6	<5	
	3/20/2002	<50	<50	<1	<1	<1	<1	<1	
	6/20/2002	78	<50	18	5	4	7	4	
	9/20/2002	<50	<50	<0.5	<0.5	<0.5	<1	<5	
	12/31/2002	61	200	13	2.2	2.1	4.6	<1	
	3/25/2003	55	<50	16	3	1	5	<1	
	7/1/2003	<50	<50	11	2	2	4	<1	
	10/2/2003	<50	<50	<1	<1	<1	<1	<1	
	12/9/2003	71	<50	10	5	2	8	<1	
	3/2/2004	69	<50	5	13	2	13	1	
	6/8/2004	<25	<50	<0.5	0.6	<0.5	<1	<1	
	9/14/2004	<50	<50	3.3	1.4	0.7	3	<0.5	
	12/28/2004	<50	<50	<0.5	<0.5	<0.5	<1.5	<0.5	
	3/29/2005	<100	<50	3.1	<0.5	0.5	<1.5	1.9	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-9	7/11/2000	92	<50	6.4	<0.5	1.2	1	<0.5	
	9/29/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
	12/7/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
	3/6/2001	<50	<50	1.1	<0.5	<0.5	<0.5	<2.0	
	6/21/2001	67	<50	0.61	0.53	<0.5	<0.5	<5.0	
	9/18/2001	<50	<50	1.4	0.63	<0.5	<0.5	<5.0	
	12/19/2001	<50	<50	4.7	0.74	0.66	1.9	<5	
	3/20/2002	110	<50	35	8	4	7	<1	
	6/20/2002	99	<50	25	5	5	8	5	
	9/20/2002	<50	<50	18	0.8	1.5	<1	<5	
	12/31/2002	54	220	11	3.4	1.9	5.1	<1	
	3/25/2003	57	<50	15	4	2	6	<1	
	7/1/2003	63	<50	24	4	3	7	<1	
	10/2/2003	<50	<50	12	<1	<1	<1	<1	
	12/9/2003	53	<50	6	6	2	9	<1	
	3/2/2004	83	<50	6	15	2	15	1	
	6/8/2004	<25	<50	<0.5	0.6	<0.5	<1	<1	
	9/14/2004	<50	<50	2	3	1.2	5.9	<0.5	
	12/28/2004	<50	<50	<0.5	<5	<0.5	<1.0	<0.5	
	3/29/2005	<100	<50	0.9	<0.5	<0.5	<1.5	<0.5	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-10	7/11/2000	<50	<50	1.5	<0.5	<0.5	<0.5	8.1	
	9/29/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	12	
	12/7/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	13	
	3/6/2001	110	<50	20	1.2	0.82	0.75	12	
	6/21/2001	57	<50	6.3	1.5	0.78	1.2	34	
	9/18/2001	59	<50	7	1.1	0.6	1.2	39	
	12/19/2001	60	80	7.5	0.68	0.56	1	47	
	3/20/2002	82	<250	23	7	3	7	26	
	6/20/2002	150	<50	47	7	6	8	60	
	9/20/2002	380	<50	160	2.7	12	11	66	
	12/31/2002	140	<50	37	3.9	2.5	5.6	64	
	3/25/2003	110	<50	38	6	3	8	63	
	7/1/2003	77	<50	29	4	3	7	71	
	10/2/2003	58	<50	29	<1	<1	<1	110	
	12/9/2003	67	<50	8	8	2	10	96	
	3/2/2004	82	<50	6	13	2	14	83	
	6/8/2004	35	<50	<0.5	0.5	<0.5	<1	54	
	9/14/2004	<50	<50	<0.5	<0.5	<0.5	<1.5	35	
	12/28/2004	<50	<50	44	<0.5	<0.5	0.89	<0.5	
	3/29/2005	<100	<50	3.1	1.0	1.1	1.7	29	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-11	7/11/2000	3,000	770	260	48	8.3	550	12	Sample was flagged. See analytical report for details
	9/29/2000	8,500	<50	1,400	9.6	280	760	33	
	12/7/2000	3,300	<50	340	6.9	70	240	<2.5	
	3/6/2001	540	<50	220	2.5	2.7	7.8	<2.0	
	6/21/2001	930	170	250	9.1	41	44	<25	
	9/18/2001	1,200	160	290	12	83	120	<25	
	12/19/2001	140	140	34	1.5	2.4	3.6	<5	
	3/20/2002	<50	<50	<1	<1	<1	<1	<1	
	6/20/2002	140	<50	37	5	5	7	6	
	9/20/2002	64	<50	32	1.2	1.9	1.3	<5	
	12/31/2002	53	<50	17	2.9	1.9	4.4	<1	
	3/25/2003	97	<125	29	5	2	8	<1	
	7/1/2003	51	<50	16	3	2	7	<1	
	10/2/2003	<50	<50	15	<1	<1	<1	<1	
	12/9/2003	69	<50	8	8	2	10	<1	
	3/2/2004	92	<50	8	15	3	15	1	
	6/8/2004	<25	<50	1.1	<0.5	<0.5	<1	<1	
	9/14/2004	<50	<50	<0.5	<0.5	<0.5	<1.5	<0.5	
	12/28/2004	<50	<50	3	<5.0	0.69	1	<0.5	
	3/29/2005	<100	<50	2.3	0.6	0.7	1.1	<0.5	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-12	7/11/2000	3,400	340	710	46	78	70	3.3	Sample was flagged. See analytical report for details
	9/29/2000	3,500	<50	1,100	8.8	100	4.2	4.7	
	12/7/2000	---	---	---	---	---	---	---	Well was inaccessible.
	3/6/2001	---	---	---	---	---	---	---	Well was inaccessible.
	6/21/2001	620	84	210	4	8	<2.5	<25	
	9/18/2001	76	<50	17	1.6	0.99	2.1	11	
	12/19/2001	88	97	23	1.7	1.3	2.6	22	
	3/20/2002	540	<50	170	12	8	12	8	
	6/20/2002	320	62	92	8	7	8	14	
	9/20/2002	<250	—	76	<2.5	3.4	<5	36	
	12/31/2002	—	—	—	—	—	—	---	Well was inaccessible.
	3/25/2003	1,600	100	540	15	50	15	8	
	7/1/2003	2,100	120	680	21	110	24	6	
	10/2/2003	150	<50	57	<1	1	<1	27	
	12/9/2003	340	<50	87	10	3	12	14	
	3/2/2004	1,100	69	270	20	6	21	7	
	6/8/2004	47	<50	<0.5	<0.5	<0.5	<1	1.5	
	9/14/2004	<50	<50	<0.5	<0.5	<0.5	<1.5	2	
	12/28/2004	<50	80	<0.5	<0.5	<0.5	<1.5	<0.5	
	3/29/2005	580	<50	90	3.1	13	7.7	0.6	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-13	8/8/2000	53,000	<50	3,700	5,600	1,400	7,200	ND	
	9/29/2000	11,000	<50	890	350	900	800	<5.0	
	12/7/2000	1,200	<50	170	7.5	7.7	26	<2.5	
	3/6/2001	1,000	<50	480	30	19	110	<2.0	
	6/21/2001	750	110	260	10	20	14	<25	
	9/18/2001	1,700	160	520	110	65	110	<50	
	12/19/2001	6,500	98	570	380	130	720	<5	
	3/20/2002	210	<250	34	2	<1	6	<1	
	6/20/2002	420	<250	130	63	15	46	10	
	9/20/2002	100	<50	36	1.5	4	2.2	<5	
	12/31/2002	2,600	320	410	170	84	240	<1	
	3/25/2003	270	<125	160	32	18	42	<1	
	7/1/2003	220	<50	58	15	8	23	<1	
	10/2/2003	410	<50	120	23	22	49	<1	
	12/9/2003	490	<50	100	12	15	47	<1	
	3/2/2004	530	<50	140	40	12	49	2	
	6/8/2004	47	<50	9.8	<0.5	0.7	<1	<1	
	9/14/2004	540	<50	99	15	13	28.9	<0.5	
	12/28/2004	110	<50	45	<0.5	<0.5	0.92	<0.5	
	3/29/2005	110	<50	22	1.3	2.2	2.8	<0.5	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
MW-14	3/20/2002	8,100	2,300	200	20	2	1,700	6	
	6/20/2002	530	<50	100	19	15	27	52	
	9/20/2002	720	98	180	29	19	34	75	
	12/31/2002	900	96	130	58	22	55	140	
	3/25/2003	590	<125	160	50	21	35	63	
	7/1/2003	220	<50	68	11	7	15	52	
	10/2/2003	460	740	1,500	190	250	370	25	
	12/9/2003	220	<50	53	8	8	13	22	
	3/2/2004	2,700	200	1,300	8	180	19	7	
	6/8/2004	160	110	43	4.4	7.4	7.3	<1	
	9/14/2004	<500	<50	41	3.1	6.5	7.5	<0.5	
	12/28/2004	1,100	360	460	4.9	24	5.5	<0.5	
	3/29/2005	3,400	240	940	76	82	73	0.6	
MW-15 @ 30'	**5/4/2005**	**110,000**	**250,000**	**21,000**	**19,000**	**1,000**	**5,700**	**22,000**	
MW-15 @ 60'	**5/4/2005**	**920**	**<50**	**190**	**140**	**9.2**	**48**	**59**	
MW-15 @ 83'	**5/4/2005**	**3,400**	**<50**	**580**	**780**	**43**	**210**	**7.3**	
MW-15 @ 140'	**5/4/2005**	**100,000**	**230,000**	**20,000**	**18,000**	**920**	**5,200**	**19,000**	
MW-16	**5/3/2005**	**<100**	**<50**	**1.1**	**1.0**	**1.0**	**4.2**	**120**	
MW-17	**5/3/2005**	**<100**	**<50**	**0.6**	**0.7**	**0.9**	**3.7**	**32**	
DW-1020	6/30/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/1/1999	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	1/5/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/8/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0	
	3/28/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
DW-1020	4/21/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0	
	5/26/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	
	6/26/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0	
	7/21/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0	
	8/29/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0	
	9/29/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0	
	10/3/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0	
	12/7/2000	140	<50	<0.5	0.58	<0.5	1.3	2	Sample was flagged. See analytical report for details
	12/29/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0	
	1/5/2001	<50	---	<0.5	<0.5	<0.5	<0.5	<2.0	Sample analyzed by Sparger Technology Inc
	1/5/2001	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	Sample analyzed by Entech Analytical Labs Inc
	1/29/2001	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	Sample was flagged. See analytical report for details
	2/9/2001	<50	89	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/22/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0	
	2/28/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	3/6/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0	
	4/6/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/14/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/21/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	7/13/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/22/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	9/18/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/8/2001	<50	160	<0.5	<0.5	<0.5	<0.5	<5	
	11/20/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<5	
	12/19/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<5	
	1/15/2002	<50	<250	<1	<1	<1	<1	<1	
	2/14/2002	<50	<50	<0.50	<0.50	<0.50	<0.50	<2.0	
	3/20/2002	<50	<50	<1	<1	<1	<1	<1	
	4/11/2002	<50	<50	<0.5	<0.5	<0.5	<0.5	<5	
	5/15/2002	<50	<50	<0.5	<0.5	<0.5	<0.5	<5	
	6/20/2002	<50	<50	<1	<1	<1	<1	<1	
	7/10/2002	<50	<50	<0.5	<0.5	<0.5	<1	<5	
	8/8/2002	<50	<50	<0.5	<0.5	<0.5	<1	<5	
	9/20/2002	<50	<50	<0.5	<0.5	<0.5	<1	<5	
	12/31/2002	<50	<50	<0.5	<0.5	<0.5	<1	<1	

Table 2. Analytical Results for Ground Water - 1100 Bennett Valley Road, Santa Rosa, California

Well ID	Sample Date	TPH-G	TPH-D	Benzene	Toluene	Ethyl benzene	Xylenes	MTBE	Notes
		<---------- ppb ---------->							
DW-1020	3/25/2003	<250	<125	<1	<1	<1	<1	<1	
	7/1/2003	<50	<50	<1	<1	<1	<1	<1	
	10/2/2003	<50	<50	<1	<1	<1	<1	<1	
	12/9/2003	<50	<50	<1	<1	<1	<1	<1	
	3/2/2004	<50	77	<1	<1	<1	<1	<1	
	6/8/2004	<25	<50	<0.5	<0.5	<0.5	<1	<1	
	9/14/2004	<50	<50	<0.5	<0.5	<0.5	<1.5	<0.5	
	12/28/2004	<50	<50	<0.5	<0.5	<0.5	<1.5	<0.5	
	3/29/2005	<100	<50	<0.5	<0.5	<0.5	<1.5	<0.5	

Explanation:

TPH(G) = Total Petroleum Hydrocarbons as Gasoline
TPH(D) = Total Petroleum Hydrocarbons as Diesel.
MTBE = Methyl tert butyl ether
ppb = parts per billion

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Sample Date	t-Butyl alcohol (TBA)	Methyl t-butyl ether (MTBE)	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<----------ppb---------->					
MW-4	9/18/1998	ND	5,900	ND	ND	ND	
	1/4/1999	ND	7,800	ND	ND	ND	
	3/10/1999	ND	3,600	ND	ND	ND	
	6/30/1999	ND	3,000	ND	ND	ND	
	10/1/1999	---	---	---	---	---	
	1/5/2000	ND	6,000	ND	ND	ND	
	3/29/2000	ND	9,000	ND	ND	ND	
	7/11/2000	ND	5,100	ND	ND	ND	
	9/29/2000	ND	3,900	ND	ND	ND	
	12/7/2000	ND	1,300	ND	ND	ND	
	3/6/2001	620	860	ND	ND	ND	
	6/21/2001	ND	340	ND	ND	ND	
	9/18/2001	ND	730	ND	ND	ND	
	12/19/2001	ND	1,500	ND	ND	ND	
	3/20/2002	ND	200	ND	ND	1	
	6/20/2002	ND	87	ND	ND	ND	
	9/20/2002	220	720	ND	ND	ND	
	12/31/2002	40	77	ND	ND	ND	
	3/25/2003	<200	3	<1	<1	<1	
	7/1/2003	<200	10	<1	<1	<1	
	10/2/2003	<200	2	<1	<1	<1	
	12/9/2003	8	47	<1	<1	<1	
	3/2/2004	10	49	<1	<1	<1	
	6/8/2004	<1	<1	<1	<1	<1	
	9/14/2004	44	37	<0.5	<0.5	<0.5	
	12/28/2004	460	1,300	<1	<1	13	
	3/29/2005	51	180	<0.5	<0.5	1.8	
MW-5	9/18/1998	ND	15,000	ND	ND	ND	
	1/4/1999	ND	8,400	ND	ND	ND	
	3/10/1999	ND	6,800	ND	ND	ND	
	6/30/1999	ND	4,900	ND	ND	ND	
	10/1/1999	---	---	---	---	---	
	1/5/2000	ND	8,000	ND	ND	ND	
	3/29/2000	ND	6,500	ND	ND	ND	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Sample Date	t-Butyl alcohol (TBA)	Methyl t-butyl ether (MTBE)	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<----------ppb---------->					
MW-5	7/11/2000	ND	6,500	ND	ND	ND	
	9/29/2000	ND	7,700	ND	ND	ND	
	12/7/2000	ND	6,500	ND	ND	ND	
	3/6/2001	1,200	2,300	ND	ND	ND	
	6/21/2001	ND	6,200	ND	ND	ND	
	9/18/2001	ND	3,600	ND	ND	ND	
	12/19/2001	1,200	3,300	ND	ND	ND	
	3/20/2002	ND	2,200	ND	ND	ND	
	6/20/2002	ND	3,200	ND	ND	ND	
	9/20/2002	1,000	3,000	ND	ND	ND	
	12/31/2002	2,200	2,400	ND	ND	ND	
	3/25/2003	1,400	1,600	<1	<1	18	
	7/1/2003	1,800	2,200	<1	<1	20	
	10/2/2003	910	2,500	<1	<1	23	
	12/9/2003	780	1,600	<1	<1	15	
	3/2/2004	600	1,000	<1	<1	11	
	6/8/2004	<500	1,300	<500	<500	<500	
	9/14/2004	1,100	1,100	<0.5	0.61	12	
	12/28/2004	900	660	<25	<25	<25	
	3/29/2005	590	720	<0.5	<0.5	11	
MW-6	9/18/1998	ND	10	ND	ND	ND	
	1/4/1999	ND	180	ND	ND	ND	
	3/10/1999	ND	91	ND	ND	ND	
	6/30/1999	ND	120	ND	ND	ND	
	10/1/1999	ND	<250	ND	ND	ND	
	1/5/2000	ND	260	ND	ND	ND	
	3/29/2000	ND	<50	ND	ND	ND	
	7/13/2000	ND	<13	ND	ND	ND	
	9/29/2000	ND	610	ND	ND	ND	
	12/7/008	---	---	---	---	---	
	3/6/2001	640	120	ND	ND	ND	
	6/21/2001	ND	<1,250	ND	ND	ND	
	9/18/2001	ND	<1,000	ND	ND	ND	
	12/19/2001	590	790	ND	ND	ND	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Sample Date	t-Butyl alcohol (TBA)	Methyl t-butyl ether (MTBE)	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<----------ppb---------->					
MW-6	3/20/2002	ND	810	ND	ND	ND	
	6/20/2002	ND	960	ND	ND	ND	
	9/20/2002	1,200	1,500	ND	ND	ND	
	12/31/2002	2,200	2,300	ND	ND	ND	
	3/25/2003	1,200	1,000	<1	<1	7	
	7/1/2003	1,100	1,400	<1	<1	9	
	10/2/2003	670	1,900	<1	<1	11	
	12/9/2003	130	280	<1	<1	2	
	3/2/2004	28	47	<1	<1	1	
	6/8/2004	<10	<10	<10	<10	<10	
	9/14/2004	<5	1	<0.5	<0.5	<0.5	
	12/28/2004	---	---	---	---	---	
	3/29/2005	59	29	<0.5	<0.5	<0.5	
MW-7	9/18/1998	ND	<1	ND	ND	ND	
	1/4/1999	ND	35	ND	ND	ND	
	3/10/1999	ND	18	ND	ND	ND	
	6/30/1999	ND	<125	ND	ND	ND	
	10/1/1999	ND	<100	ND	ND	ND	
	1/5/2000	ND	<50	ND	ND	ND	
	3/29/2000	ND	<50	ND	ND	ND	
	7/11/2000	ND	12	ND	ND	ND	
	9/29/2000	ND	<25	ND	ND	ND	
	12/7/2000	ND	<25	ND	ND	ND	
	3/6/2001	83	<2.0	ND	ND	7.5	
	6/21/2001	ND	<500	ND	ND	ND	
	9/18/2001	ND	<50	ND	ND	ND	
	12/19/2001	ND	<50	ND	ND	ND	
	3/20/2002	ND	---	ND	ND	ND	
	6/20/2002	ND	<20	ND	ND	ND	
	9/20/2002	130	7.7	ND	ND	ND	
	12/31/2002	130	5	ND	ND	ND	
	3/25/2003	<200	41	<1	<1	<1	
	7/1/2003	<200	49	<1	<1	<1	
	10/2/2003	<200	31	<1	<1	<1	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Sample Date	t-Butyl alcohol (TBA)	Methyl t-butyl ether (MTBE)	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<----------ppb---------->					
MW-7	12/9/2003	27	24	<1	<1	<1	
	3/2/2004	210	17	<1	<1	<1	
	6/8/2004	<10	<10	<10	<10	<10	
	9/14/2004	89	6	<0.5	<0.5	<0.5	
	12/28/2004	360	3.7	<0.5	<0.5	<0.5	
	3/29/2005	110	2	<1	<1	<1	
MW-8	9/18/1998	ND	<1	ND	ND	ND	
	1/4/1999	ND	<5.0	ND	ND	ND	
	3/10/1999	ND	<5.0	ND	ND	ND	
	6/30/1999	ND	<5.0	ND	ND	ND	
	10/1/1999	ND	<5.0	ND	ND	ND	
	1/5/2000	ND	<2.0	ND	ND	ND	
	3/29/2000	ND	<0.5	ND	ND	ND	
	7/11/2000	ND	<0.5	ND	ND	ND	
	9/29/2000	ND	<0.5	ND	ND	ND	
	12/7/2000	ND	<0.5	ND	ND	ND	
	3/6/2001	ND	<2.0	ND	ND	ND	
	6/21/2001	ND	<5.0	ND	ND	ND	
	9/18/2001	ND	<5.0	ND	ND	ND	
	12/19/2001	ND	<5	ND	ND	ND	
	3/20/2002	ND	<1	ND	ND	ND	
	6/20/2002	ND	4	ND	ND	ND	
	9/20/2002	ND	<5	ND	ND	ND	
	12/31/2002	ND	<1	ND	ND	ND	
	3/25/2003	<200	<1	<1	<1	<1	
	7/1/2003	<200	<1	<1	<1	<1	
	10/2/2003	<200	<1	<1	<1	<1	
	12/9/2003	<5	<1	<1	<1	<1	
	3/2/2004	<5	1	<1	<1	<1	
	6/8/2004	<1	<1	<1	<1	<1	
	9/14/2004	<5	<0.5	<0.5	<0.5	<0.5	
	12/28/2004	<5	<0.5	<0.5	<0.5	<0.5	
	3/29/2005	<5	1.9	<0.5	<0.5	0.6	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Sample Date	t-Butyl alcohol (TBA)	Methyl t-butyl ether (MTBE)	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<----------ppb---------->					
MW-9	7/11/2000	ND	<0.5	ND	ND	ND	
	9/29/2000	ND	<0.5	ND	ND	ND	
	12/7/2000	ND	<0.5	ND	ND	ND	
	3/6/2001	ND	<2.0	ND	ND	ND	
	6/21/2001	ND	<5.0	ND	ND	ND	
	9/18/2001	ND	<5.0	ND	ND	ND	
	12/19/2001	ND	<5	ND	ND	ND	
	3/20/2002	ND	<1	ND	ND	ND	
	6/20/2002	ND	5	ND	ND	ND	
	9/20/2002	ND	<5	ND	ND	ND	
	12/31/2002	ND	<1	ND	ND	ND	
	3/25/2003	<200	<1	<1	<1	<1	
	7/1/2003	<200	<1	<1	<1	<1	
	10/2/2003	<200	<1	<1	<1	<1	
	12/9/2003	<5	<1	<1	<1	<1	
	3/2/2004	<5	1	<1	<1	<1	
	6/8/2004	<1	<1	<1	<1	<1	
	9/14/2004	<5	<0.5	<0.5	<0.5	<0.5	
	12/28/2004	<5	<0.5	<0.5	<0.5	<0.5	
	3/29/2005	<5	<0.5	<0.5	<0.5	<0.5	
MW-10	7/11/2000	ND	8.1	ND	ND	ND	
	9/29/2000	ND	12	ND	ND	ND	
	12/7/2000	ND	13	ND	ND	ND	
	3/6/2001	ND	12	ND	ND	ND	
	6/21/2001	ND	34	ND	ND	ND	
	9/18/2001	ND	39	ND	ND	ND	
	12/19/2001	ND	47	ND	ND	ND	
	3/20/2002	ND	26	ND	ND	ND	
	6/20/2002	ND	60	ND	ND	ND	
	9/20/2002	ND	66	ND	ND	ND	
	12/31/2002	16	64	ND	ND	ND	
	3/25/2003	<200	63	<1	<1	<1	
	7/1/2003	<200	71	<1	<1	<1	
	10/2/2003	<200	110	<1	<1	<1	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Sample Date	t-Butyl alcohol (TBA)	Methyl t-butyl ether (MTBE)	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<----------ppb---------->					
MW-10	12/9/2003	<5	96	<1	<1	<1	
	3/2/2004	<5	83	<1	<1	<1	
	6/8/2004	<1	54	<1	<1	<1	
	9/14/2004	11	35	<0.5	<0.5	<0.5	
	12/28/2004	<5	<0.5	<0.5	<0.5	<0.5	
	3/29/2005	<5	29	<1	<1	<1	
MW-11	7/11/2000	ND	12	ND	ND	ND	
	9/29/2000	ND	33	ND	ND	ND	
	12/7/2000	ND	<2.5	ND	ND	ND	
	3/6/2001	ND	<2.0	ND	ND	ND	
	6/21/2001	ND	<25	ND	ND	ND	
	9/18/2001	ND	<25	ND	ND	ND	
	12/19/2001	ND	<5	ND	ND	ND	
	3/20/2002	ND	<1	ND	ND	ND	
	6/20/2002	ND	6	ND	ND	ND	
	9/20/2002	ND	<5	ND	ND	ND	
	12/31/2002	ND	<1	ND	ND	ND	
	3/25/2003	<200	<1	<1	<1	<1	
	7/1/2003	<200	<1	<1	<1	<1	
	10/2/2003	<200	<1	<1	<1	<1	
	12/9/2003	<5	<1	<1	<1	<1	
	3/2/2004	<5	1	<1	<1	<1	
	6/8/2004	<1	<1	<1	<1	<1	
	9/14/2004	<5	<0.5	<0.5	<0.5	<0.5	
	12/28/2004	<5	<0.5	<0.5	<0.5	<0.5	
	3/29/2005	<5	<0.5	<0.5	<0.5	<0.5	
MW-12	7/11/2000	ND	3.3	ND	ND	ND	
	9/29/2000	ND	4.7	ND	ND	ND	
	12/7/2000	ND	---	ND	ND	ND	
	3/6/2001	ND	---	ND	ND	ND	
	6/21/2001	ND	<25	ND	ND	ND	
	9/18/2001	ND	11	ND	ND	ND	
	12/19/2001	ND	22	ND	ND	ND	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Sample Date	t-Butyl alcohol (TBA)	Methyl t-butyl ether (MTBE)	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<----------ppb---------->					
MW-12	3/20/2002	ND	8	ND	ND	ND	
	6/20/2002	ND	14	ND	ND	ND	
	9/20/2002	ND	36	ND	ND	ND	
	12/31/2002	ND	---	ND	ND	ND	
	3/25/2003	<200	8	<1	<1	<1	
	7/1/2003	<200	6	<1	<1	<1	
	10/2/2003	<200	27	<1	<1	<1	
	12/9/2003	<5	14	<1	<1	<1	
	3/2/2004	9	7	<1	<1	<1	
	6/8/2004	<1	1.5	<1	<1	<1	
	9/14/2004	<5	2	<0.5	<0.5	<0.5	
	12/28/2004	<5	<0.5	<0.5	<0.5	<0.5	
	3/29/2005	<5	0.6	<0.5	<0.5	<0.5	
MW-13	8/8/2000	ND	ND	ND	ND	ND	
	9/29/2000	ND	<5.0	ND	ND	ND	
	12/7/2000	ND	<2.5	ND	ND	ND	
	3/6/2001	ND	<2.0	ND	ND	ND	
	6/21/2001	ND	<25	ND	ND	ND	
	9/18/2001	ND	<50	ND	ND	ND	
	12/19/2001	21	<5	ND	ND	ND	
	3/20/2002	ND	<1	ND	ND	ND	
	6/20/2002	ND	10	ND	ND	ND	
	9/20/2002	ND	<5	ND	ND	ND	
	12/31/2002	21	<1	ND	ND	ND	
	3/25/2003	<200	<1	<1	<1	<1	
	7/1/2003	<200	<1	<1	<1	<1	
	10/2/2003	<200	<1	<1	<1	<1	
	12/9/2003	<5	<1	<1	<1	<1	
	3/2/2004	6	2	<1	<1	<1	
	6/8/2004	<1	<1	<1	<1	<1	
	9/14/2004	<5	<0.5	<0.5	<0.5	<0.5	
	12/28/2004	<5	<0.5	<0.5	<0.5	<0.5	
	3/29/2005	<5	<0.5	<0.5	<0.5	<0.5	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Sample Date	t-Butyl alcohol (TBA)	Methyl t-butyl ether (MTBE)	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<----------ppb---------->					
MW-14	3/20/2002	ND	6	ND	ND	ND	
	6/20/2002	ND	52	ND	ND	ND	
	9/20/2002	32	75	ND	ND	ND	
	12/31/2002	86	140	ND	ND	ND	
	3/25/2003	<200	63	<1	<1	<1	
	7/1/2003	<200	52	<1	<1	<1	
	10/2/2003	<200	25	<1	<1	<1	
	12/9/2003	11	22	<1	<1	<1	
	3/2/2004	61	7	<1	<1	<1	
	6/8/2004	<1	<1	<1	<1	<1	
	9/14/2004	<5	<0.5	<0.5	<0.5	<0.5	
	12/28/2004	14	<0.5	<0.5	<0.5	<0.5	
	3/29/2005	25	0.6	<0.5	<0.5	<0.5	
MW-15 @ 30'	5/4/2005	2,100	22,000	5	<5	59	
MW-15 @ 60'	5/4/2005	7	59	<0.5	<0.5	0.6	
MW-15 @ 83'	5/4/2005	<5	7.3	<0.5	<0.5	0.6	
MW-15 @ 140'	5/4/2005	2,100	19,000	<5	<5	52	
MW-16	5/3/2005	51	120	<0.5	<0.5	0.6	
MW-17	5/3/2005	<5	32	<0.5	<0.5	<0.5	
DW-1020	6/30/1999	ND	<5.0	ND	ND	ND	
	10/1/1999	ND	<5.0	ND	ND	ND	
	1/5/2000	ND	<5.0	ND	ND	ND	
	2/8/2000	ND	<2.0	ND	ND	ND	
	3/28/2000	ND	<0.5	ND	ND	ND	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Sample Date	t-Butyl alcohol (TBA)	Methyl t-butyl ether (MTBE)	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<----------ppb---------->					
DW-1020	4/21/2000	ND	<2.0	ND	ND	ND	
	5/26/2000	ND	<0.5	ND	ND	ND	
	6/26/2000	ND	<2.0	ND	ND	ND	
	7/21/2000	ND	<2.0	ND	ND	ND	
	8/29/2000	ND	<2.0	ND	ND	ND	
	9/29/2000	ND	<2.0	ND	ND	ND	
	10/3/2000	ND	<2.0	ND	ND	ND	
	12/7/2000	ND	2	ND	ND	ND	
	12/29/2000	ND	<2.0	ND	ND	ND	
	1/5/2001	ND	<2.0	ND	ND	ND	
	1/5/2001	ND	<5.0	ND	ND	ND	
	1/29/2001	ND	<5.0	ND	ND	ND	
	2/9/2001	ND	<5.0	ND	ND	ND	
	2/22/2001	ND	<2.0	ND	ND	ND	
	2/28/2001	ND	<5.0	ND	ND	ND	
	3/6/2001	ND	<2.0	ND	ND	ND	
	4/6/2001	ND	<5.0	ND	ND	ND	
	5/14/2001	ND	<5.0	ND	ND	ND	
	6/21/2001	ND	<5.0	ND	ND	ND	
	7/13/2001	ND	<5.0	ND	ND	ND	
	8/22/2001	ND	<5.0	ND	ND	ND	
	9/18/2001	ND	<5.0	ND	ND	ND	
	10/8/2001	ND	<5	ND	ND	ND	
	11/20/2001	ND	<5	ND	ND	ND	
	12/19/2001	ND	<5	ND	ND	ND	
	1/15/2002	ND	<1	ND	ND	ND	
	2/14/2002	ND	<2.0	ND	ND	ND	
	3/20/2002	ND	<1	ND	ND	ND	
	4/11/2002	ND	<5	ND	ND	ND	
	5/15/2002	ND	<5	ND	ND	ND	
	6/20/2002	ND	<1	ND	ND	ND	
	7/10/2002	ND	<5	ND	ND	ND	
	8/8/2002	ND	<5	ND	ND	ND	
	9/20/2002	ND	<5	ND	ND	ND	
	12/31/2002	ND	<1	ND	ND	ND	

Table 3. Analytical Results for Ground Water - Oxygenates - Redwood Oil Service Station, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Sample Date	t-Butyl alcohol (TBA)	Methyl t-butyl ether (MTBE)	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
		<----------ppb---------->					
DW-1020	3/25/2003	<200	<1	<1	<1	<1	
	7/1/2003	<200	<1	<1	<1	<1	
	10/2/2003	<200	<1	<1	<1	<1	
	12/9/2003	<5	<1	<1	<1	<1	
	3/2/2004	<5	<1	<1	<1	<1	
	6/8/2004	<1	<1	<1	<1	<1	
	9/14/2004	<5	<0.5	<0.5	<0.5	<0.5	
	12/28/2004	<5	<0.5	<0.5	<0.5	<0.5	
	3/29/2005	<5	<0.5	<0.5	<0.5	<0.5	

Explanation:

ppb = parts per billion

Table 4. Analytical Results for Soil, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Date	Sample Depth (feet)	TPH-Gas	TPH-Diesel	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
			<---------- ppm ---------->						
MW-1	5/15/92	11	250	---	2.7	11	4.8	19	---
	5/15/92	25.5	1.1	---	0.120	0.066	0.012	0.069	---
MW-2	5/15/92	11	120	---	1.0	2.0	1.5	4.3	---
	5/15/92	19.5	18	---	0.095	0.130	0.030	0.170	---
MW-3	5/15/92	11	17	---	0.029	0.120	0.210	0.440	---
	5/15/92	11	---	---	0.097	0.170	0.140	1.5	---
	5/15/92	16	1.7	---	0.0076	0.013	0.014	0.049	---
	5/15/92	18.5	<1	---	0.0041	0.007	<0.0025	<0.0093	---
MW-5	9/14/98	6.0	9.2	93	2.3	4.9	1.7	9.2	---
MW-6	9/14/98	4.5	<0.5	<1.0	<0.005	<0.005	0.013	0.023	---
MW-7	9/14/98	6.0	13	2	0.14	0.028	0.096	0.084	---
MW-8	9/14/98	5.5	<0.5	<1.0	<0.005	<0.005	<0.005	<0.010	---
MW-9[1]	6/19/00	11.5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<2.0[1]
MW-10[1]	6/19/00	6.5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<2.0[1]
MW-11[1]	6/19/00	11.5	330	<1.0	3.3	3.7	6.2	200	<10[1]
MW-12[1]	6/19/00	11.5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<2.0[1]
MW-13	7/18/00	7.5	480	38[2]	2.1	4.0	10	31	0.51

Table 4. Analytical Results for Soil, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Date	Sample Depth (feet)	TPH-Gas	TPH-Diesel	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
			<---------- ppm ---------->						
B-1	7/18/94	4.5-5.0	<1	---	<0.0025	<0.0025	<0.0025	<0.0025	---
	7/18/94	14.5-15.0	76	---	0.510	0.490	0.680	3.6	---
	7/18/94	18.0-18.5	<1	---	0.066	<0.0025	0.013	0.014	---
B-2	7/18/94	13.0-13.5	<1	---	<0.0025	0.007	0.003	0.014	---
B-3	7/18/94	5.5-6.0	<1	---	<0.0025	<0.0025	<0.0025	<0.0025	---
	7/18/94	10.5-11.0	310	---	4.8	11	4.7	26	---
	7/18/94	16.0-16.5	44	---	1.2	1.4	0.360	2	---
B-4	7/18/94	9.5-10.0	70	---	1	2.2	0.890	5.2	---
	7/18/94	18.0-18.5	<1	---	<0.0025	<0.0025	<0.0025	<0.0025	---
B-5	7/18/94	9.5-10.0	60	---	2.1	2.5	0.590	2.9	---
	7/18/94	14.5-15.0	<1	---	<0.0025	0.0037	<0.0025	<0.0025	---
B-6	7/18/94	14.5-15.0	<1	---	<0.0025	<0.0025	<0.0025	<0.0025	---
B-7	7/18/94	12.5-13.0	1.1	---	0.040	0.1	0.022	0.089	---
	7/18/94	17.5-18.0	<1	---	<0.0025	<0.0025	<0.0025	<0.0025	---
B-8	10/27/94	8.5-9.5	120	---	1.9	3.7	2	10	---
	10/27/94	11.5-12.0	180	---	4.5	7.2	3.1	16	---
B-9	10/27/94	9.0-9.5	3.0	---	0.097	0.019	0.062	0.025	---
	10/27/94	17.0-17.5	<1	---	<0.0025	<0.0025	<0.0025	<0.0025	---
B-10	10/26/94	13.5-14.0	<1	---	<0.0025	<0.0025	<0.0025	<0.0025	---

Table 4. Analytical Results for Soil, 1100 Bennett Valley Road, Santa Rosa, California

Sample ID	Date	Sample Depth (feet)	TPH-Gas	TPH-Diesel	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
			<---------- ppm ---------->						
B-11	10/27/94	8.5-9.0	<1	---	<0.0025	<0.0025	<0.0025	<0.0025	---
B-12	10/27/94	9.0-9.5	<1	---	<0.0025	<0.0025	<0.0025	<0.0025	---
B-13	10/27/94	8.5-9.5	<1	---	<0.0025	<0.0025	<0.0025	<0.0025	---
B-14	7/18/00	7.5	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005

Notes:

[1] Sample was analyzed by EPA method 8260B for fuel oxygenates. No oxygenates were detected at detection limits from 2.0 to 10 ppb.

[2] TPH gas was present in the diesel range.

APPENDIX C

ECM STANDARD OPERATING PROCEDURES

ECM STANDARD OPERATING PROCEDURE

LOGGING METHOD

Unconsolidated soil is classified and described by trained ECM field personnel. All available information is used, including the following: soil recovered in the sampler, including the soil visible on both ends of the sample retained for possible analysis; soil cuttings generated during drilling; and the drilling contractor's observations of the drill rig's behavior.

Classification and description of unconsolidated soil is accomplished using the American Society of Testing and Materials (ASTM) Methods D2487-85 (Unified Soil Classification System (USCS)) and/or D2488-69 (Description and Identification of Soils (Visual-Manual Procedure)).

The soil classification and description is recorded on the field log sheet by ECM field personnel and includes the following information:

1) Soil type;
2) Soil classification;
3) Soil color, including mottling;
4) Moisture content;
5) Plasticity and consistency (fine-grained material) or density (coarse-grained material);
6) Percentages of clay, silt, sand and gravel;
7) Grain size range of sands and gravels;
8) Angularity and largest diameter of gravel component;
9) Estimated permeability;
10) Odor; and

11)Any other observations which would assist in the interpretation of the depositional environment and/or differentiation between the various geologic units expected to be encountered.

In addition to the above, the ground water levels encountered during drilling and measured after the water stabilized is also recorded on the field log.

ECM STANDARD OPERATING PROCEDURE

OVM READINGS

ECM uses an organic vapor meter (OVM) to determine the presence or absence of volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene, and xylenes in soil samples chosen for field screening. The OVM uses a photoionization detector (PID) and is calibrated daily to 100 parts per million of 1-liter of isobutylene. The OVM, which measures in parts per million by volume (ppmv), is used for qualitative, not quantitative, assessment because the correlation between the volume measurements of the OVM and the weight measurements of the laboratory instruments is not well defined.

A field screen sample is obtained from the brass tube immediately above or below the brass tube containing the sample selected for possible analysis. The soil to be screened is removed from the brass tube, and is placed in a pre-cleaned brass tube with aluminum foil and a polyethylene cap on one end. The brass tube is loosely filled to approximately 1/2 full. Another square of aluminum foil is placed on the open end and a polyethylene cap with crossed slits is placed over it.

The field screen sample is allowed to temperature equilibrate for approximately 15 to 30 minutes in the sun, allowing any VOCs which might be present in the soil to volatilize out into the brass tube's headspace. The OVM nozzle is then placed inside the sealed brass tube, through the slits in the cap, in order to measure the VOCs present, if any, in the headspace. The nozzle should remain inside the brass tube for approximately 15 to 30 seconds or until the maximum reading has been recorded on the OVM readout panel.

The depth from which the sample came and the corresponding OVM reading is recorded on the original field log sheet. Field observations, OVM and (odor and staining) readings are used in determining which soil samples are to be analyzed in the laboratory.

ECM STANDARD OPERATING PROCEDURE

MONITORING WELL DESIGN AND CONSTRUCTION

Where possible, information from published and unpublished reports is reviewed prior to installation of monitoring wells. Relevant data includes highest and lowest anticipated ground water elevations, aquifer materials, aquifer yield and contaminants expected. This information is used to aid the field geologist rather than to predetermine how the wells will be constructed. Well construction is based on *site specific conditions* and is determined in the field after discussion with the senior geologist.

Monitoring wells are constructed with flush-threaded, 2-inch or 4-inch diameter, slotted PVC, stainless steel or teflon well screen and PVC, stainless steel or teflon blank casing. Number 3 or #212 sand is used in the annular space around the well screen. The sand is placed into the annular space around the well screen to approximately 2 feet above the top of the well screen. If high ground water conditions exist, the sand may be placed 0 to 1 foot above the top of the well screen. Two feet of bentonite pellets are used to separate the sand from the sanitary surface seal (grout). If high ground water conditions exist 1/2 foot of bentonite may be used to separate the sand from the sanitary surface seal.

The grout (Portland cement with approximately 3-5% bentonite powder) is poured into the annular space above the bentonite pellets. If the surface seal is greater than 5 feet thick, grout consisting of cement mixed with 3-5% bentonite powder will be tremied or pumped into the annular space above the bentonite pellets to prevent the infiltration of surface water into the well. If the surface seal is less than 5 feet thick, the grout will be poured from the surface. The resulting seal will be checked for shrinkage within 24 hours and additional grout will be added, if necessary. The surface seal is used to prevent infiltration of surface water into the well.

The monitoring well(s) is locked with a stovepipe or cap and covered with a traffic-rated vault if it is located in a developed area. The well ID is clearly marked on the cap or casing.

ECM STANDARD OPERATING PROCEDURE

WELL DEVELOPMENT

ECM develops ground water monitoring wells not less than 48 hours after the placement of the surface seal (grouting) to allow sufficient time for the cement grout to set. The wells are developed to restore the natural hydraulic conductivity of the formation(s) to be monitored and to remove all sand and as much fine-grained material as possible.

Prior to development, ECM field personnel measure the depth to water and the total depth of the well. The total depth measurement is compared to the well completion diagram shown on the field log and any discrepancies are noted.

Well development consists of several cycles of surging and evacuation of water in the well, each ending with measurements of temperature, pH, conductivity, and observation of turbidity. Surging takes place for several minutes to loosen fines from the screened interval. The vented surge block is placed block several feet below the water surface and pulled upward.

Development shall continue for a period of at least four hours or when ten well volumes have been removed, whichever occurs first, and until ground water removed from the well is clear and visibly free of suspended materials. Note the time and the approximate volume of water removed prior to each determination of the following parameters (and whether well is bailed or pumped dry): pH, temperature, and specific conductivity. These measurements should be made a minimum of five times during well development.

If micro wells (well diameter 3/4" or less) are installed, the well may not be surged. In this case, a minimum of twenty casing volumes will be removed.

If the water is still cloudy after the four hour period but these three parameters have stabilized, then the well will be considered developed regardless of the volume of water purged from the well. Stabilization of pH, temperature, and specific conductivity will be considered to have occurred when these parameters undergo changes not exceeding $\pm$0.1, 0.5 degrees F, and 5 percent, respectively.

After development is completed, the depth to water and the total depth of the well are remeasured. The total depth of the well and the total depth noted on the field log should be approximately the same. All data measured during the procedures described herein are recorded on the ECM Well Development Form, which is part of the project file.

The ground water removed from the wells during development remains onsite in 55-gallon Department of Transportation-approved drums. The water is removed by a licensed hauler and taken to an approved disposal facility.

APPENDIX D

WELL COMPLETION DETAILS,
SOIL CLASSIFICATION SYSTEM CHART,
AND BORING LOGS

					Group Symbol				Group Name
>50% Sand & Gravel	GRAVEL % gravel > % sand	≤5% fines	Well-graded		GW	<15% sand			Well-graded GRAVEL
						≥15% sand			Well-graded GRAVEL with Sand
			Poorly graded		GP	<15% sand			Poorly graded GRAVEL
						≥15% sand			Poorly graded GRAVEL with Sand
		10% fines	Well-graded	fines–ML or MH	GW-GM	<15% sand			Well-graded GRAVEL with Silt
						≥15% sand			Well-graded GRAVEL with Silt and Sand
				fines–CL or CH	GW-GC	<15% sand			Well-graded GRAVEL with Clay
						≥15% sand			Well-graded GRAVEL with Clay and Sand
			Poorly graded	fines–ML or MH	GP-GM	<15% sand			Poorly graded GRAVEL with Silt
						≥15% sand			Poorly graded GRAVEL with Silt and Sand
				fines–CL or CH	GP-GC	<15% sand			Poorly graded GRAVEL with Clay
						≥15% sand			Poorly graded GRAVEL with Clay and Sand
		≥15% fines		fines–ML or MH	GM	<15% sand			Silty GRAVEL
						≥15% sand			Silty GRAVEL with Sand
				fines–CL or CH	GC	<15% sand			Clayey GRAVEL
						≥15% sand			Clayey GRAVEL with Sand
	SAND % sand ≥ % gravel	≤5% fines	Well-graded		SW	<15% gravel			Well-graded SAND
						≥15% gravel			Well-graded SAND with Gravel
			Poorly graded		SP	<15% gravel			Poorly graded SAND
						≥15% gravel			Poorly graded SAND with Gravel
		10% fines	Well-graded	fines–ML or MH	SW-SM	<15% gravel			Well-graded SAND with Silt
						≥15% gravel			Well-graded SAND with Silt and Gravel
				fines–CL or CH	SW-SC	<15% gravel			Well-graded SAND with Clay
						≥15% gravel			Well-graded SAND with Clay and Gravel
			Poorly graded	fines–ML or MH	SP-SM	<15% gravel			Poorly graded SAND with Silt
						≥15% gravel			Poorly graded SAND with Silt and Gravel
				fines–CL or CH	SP-SC	<15% gravel			Poorly graded SAND with Clay
						≥15% gravel			Poorly graded SAND with Clay and Gravel
		≥15% fines		fines–ML or MH	SM	<15% gravel			Silty SAND
						≥15% gravel			Silty SAND with Gravel
				fines–CL or CH	SC	<15% gravel			Clayey SAND
						≥15% gravel			Clayey SAND with Gravel
50% or More Fines	Low-Plasticity Clay				CL	<30% sand & gravel	<15% Sand and Gravel		Lean CLAY
							15-25% sand & gravel	% sand ≥ % gravel	Lean CLAY with Sand
								% sand < % gravel	Lean CLAY with Gravel
						≥30% sand & gravel	% sand ≥ % of gravel	<15% gravel	Sandy lean CLAY
								≥15% gravel	Sandy lean CLAY with Gravel
							% sand < % gravel	<15% sand	Gravelly lean CLAY
								≥15% sand	Gravelly lean CLAY with Sand
	Low-Permeability Silt				ML	<30% sand & gravel	>15% sand & gravel		SILT
							15-25% sand & gravel	% sand ≥ % gravel	SILT with Sand
								% sand < % gravel	SILT with Gravel
						≥30% sand & gravel	% sand ≥ % of gravel	<15% gravel	Sandy SILT
								≥15% gravel	Sandy SILT with Gravel
							% sand < % gravel	<15% sand	Gravelly SILT
								≥15% sand	Gravelly SILT with Sand
	Plastic Clay				CH	<30% sand & gravel	<15% sand & gravel		Fat CLAY
							15-25% sand & gravel	% sand ≥ % gravel	Fat CLAY with Sand
								% sand < % gravel	Fat CLAY with Gravel
						≥30% sand & gravel	% sand ≥ % of gravel	<15% gravel	Sandy fat CLAY
								≥15% gravel	Sandy fat CLAY with Gravel
							% sand < % gravel	<15% sand	Gravelly fat CLAY
								≥15% sand	Gravelly fat CLAY with Sand
	Plastic Silt				MH	<30% sand & gravel	<15% sand & gravel		Elastic SILT
							15-25% sand & gravel	% sand ≥ % gravel	Elastic SILT with Sand
								% sand < % gravel	Elastic SILT with Gravel
						≥30% sand & gravel	% sand ≥ % of gravel	<15% gravel	Sandy elastic SILT
								≥15% gravel	Sandy elastic SILT with Gravel
							% sand < % gravel	<15% sand	Gravelly elastic SILT
								≥15% sand	Gravelly elastic SILT with Sand
	Organics (Peat or Bay Mud)				OL/OH	<30% sand & gravel	<15% sand & gravel		Organic SOIL
							15-25% sand & gravel	% sand ≥ % gravel	Organic SOIL with Sand
								%sand < % gravel	Organic SOIL with Gravel
						≥30% sand & gravel	% sand ≥ % gravel	<15% gravel	Sandy Organic SOIL
								≥15% gravel	Sandy Organic SOIL with Gravel
							% sand < % gravel	<15% sand	Gravelly Organic SOIL
								≥15% sand	Gravelly Organic SOIL with Sand

Project No.: 98-511-21
Well / Boring No.: MW-15

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
0			CONTINUOUS	SOLID	GROUT		Concrete pad, approximately 8"
1							
2						GW	Sandy GRAVEL with Silt: damp; very compact; 10% silt, 20% fine-coarse sand, 70% sub-rounded gravel; moderate-high estimated permeability; no odor
3							
4							
5							
6							
7							
8							Saturated below 8 feet
9							
10							
11							
12							
13						CL	Lean CLAY: gray/brown; 90% clay, 10% very fine sand; low estimated permeability; no odor
14							
15							
16							
17							
18							
19							
20							

Logged by: D. Hazard
Drilling company: RSI
Drill date: 3/22/05
Installation method: sonic
Sampler type: 4" continuous
Auger size: 6"
Casing: 2"

Project No.: 98-511-21
Well / Boring No.: MW-15

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
20			CONTINUOUS	SOLID	GROUT	GC	Clayey GRAVEL: Brown/gray; wet; 10% clay, 90% gravel; moderate estimated permeability
21							
22							
23							
24							
25					BENTONITE		
26							
27							
28						GW-GM	Well-graded SAND with Gravel: gray/brown; wet; 80% medium-coarse sand, 20% gravel; high estimated permeability
29					SAND		
30				SCREENED			
31							Grades to:
32						SP	Poorly-graded SAND with Gravel: 50% coarse sand, 50% gravel; moderate-high estimated permeability
33							
34							
35							
36							Grades to:
37						SW	Well-graded SAND: green/gray; 5% silt, 90% fine-coarse sand, 5% gravel; moderate-high estimated permeability
38							
39							
40							

Project No.: 98-511-21
Well / Boring No.: MW-15

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
40			CONTINUOUS	SOLID	SAND	SC	Clayey SAND with gravel: gray/brown; 10% clay, 70% sand, 20% gravel; moderate estimated permeability
41					BENTONITE		
42							
43						ML	SILT: brown; 90% silt, 10% sand; very low estimated permeability
44							
45							
46							
47							
48							
49							Grades to:
50						ML	SILT with Sand: brown/gray; 80% silt, 10% very fine sand, 10% gravel; low estimated permeability
51							
52							
53							
54							
55							
56							
57						SC	Clayey SAND: brown; 10% clay, 80% sand; moderate estimated permeability
58							
59							
60					SAND		

Project No.: 98-511-21
Well / Boring No.: MW-15

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
60			CONTINUOUS	SCREENED	SAND	SC	Clayey SAND: 10% clay, 90% fine-coarse sand; moderate estimated permeability
61							
62							
63							
64							
65							
66							
67							
68						SC	Grades to: Clayey SAND with Gravel: dark brown; 15% clay, 70% sand, 15% gravel; semi-consolidated; low-moderate estimated permeability
69							
70				SOLID	BENTONITE	ML	Sandy SILT: dark gray; 75% silt, 25% sand; semi-consolidated; low estimated permeability
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							

Project No.: 98-511-21
Well / Boring No.: MW-15

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
80			CONTINUOUS	SOLID	BENT/ ONITE		
81							
82							
83				SCREENED	SAND	SM/ML	Grades to: Sandy SILT/Silty SAND: 50% very fine sand, 50% silt
84							
85						GC	Well-graded GRAVEL with Sand: gray/brown; 5% clay, 25% fine-coarse sand, 70% gravel; high estimated permeability
86							
87							
88							
89							
90			NONE	SOLID	BENTONITE		No recovery: consolidated materials; moderate estimated permeability estimated from cuttings
91							
92							
93							
94							
95							
96							
97							
98							
99							
100							

Project No.: 98-511-21
Well / Boring No.: MW-15

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
100			NONE	SOLID	BENTONITE		No recovery
101							
102							
103							
104							
105							
106							
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							

Project No.: 98-511-21
Well / Boring No.: MW-15

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
120			CONTINUOUS	SOLID	BENTONITE	ML	Sandy SILT with Gravel: gray/brown; 60% silt, 30% fine-medium sand, 10% well-graded/sub-rounded gravel; low estimated permeability, no odor
121							
122							
123							
124							
125							
126							
127							
128							
129							Grades to:
130						ML	Sandy SILT with Gravel: gray/brown; 70% silt, 20% sand, 10% well-graded/sub-rounded gravel; low estimated permeability, no odor
131							
132							
133							
134							
135							
136							
137						SM	Silty SAND: 30% silt, 70% sand; moderate estimated permeability; no odor
138							
139							
140					SAND		

Project No.: 98-511-21
Well / Boring No.: MW-15

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
140			CONTINUOUS	SCREENED	SAND	SM	Silty SAND: brown/gray; 30% silt, 70% very fine-fine sand; moderate estimated permeability; no odor
141							
142							
143							
144							
145							
146							
147							
148							
149							BOH at 150 feet
150							
151							
152							
153							
154							
155							
156							
157							
158							
159							
160							

Project No.: 98-511-21
Well / Boring No.: MW-16

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
0							
1	0		CONTINUOUS	SOLID	GROUT	SM	Pavement Silty SAND: gray/brown; dry; 20% silt, 80% sand (fill); moderate to high estimated permeability; no odor
2							
3						CL	Sandy Lean CLAY: 80% clay, 20% very fine sand; low estimated permeability; no odor
4							
5						SM/ML	Silty SAND/Sandy SILT: 50% silt, 50% very fine sand; moderate estimated permeability; no odor
6	0						Sandy CLAY/Clayey SAND: dark brown; damp; 50% clay, 50% very fine sand; very low estimated permeability, no odor
7							Saturated below 7 feet
8							
9							Grades to:
10						CL	Sandy CLAY: blue/gray/brown; 80% clay, 20% very fine sand; low estimated permeability; no odor
11	0						
12							
13							
14							
15							
16	0					SM	Silty SAND with Gravel: brown; 20% silt, 60% sand, 20% gravel; moderate to high estimated permeability; no odor
17						CL	Sandy CLAY: blue/gray/brown; 80% clay, 20% very fine sand; low estimated permeability; moderate hydrocarbon odor
18	285						
19						ML	Sandy SILT: blue/gray; 80% silt, 20% very fine sand; low estimated permeability; very light hydrocarbon odor
20	0						

Logged by: D. Hazard
Drilling company: RSI
Drill date: 4/01/05
Installation method: sonic
Sampler type: 4"
Auger size: 6"
Casing: 2"

Grout interval: 0-26'
Bentonite seal interval: 26-29'
Sand interval: 29-40'
Screened interval: 30-40'
Depth to water:

Project No.: 98-511-21
Well / Boring No.: MW-16

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
20	0		CONTINUOUS	SOLID	GROUT	SM	Silty SAND with Gravel: brown; 10% silt, 70% coarse sand, 20% gravel; moderate to high estimated permeability
21							
22							
23							
24							
25	0						
26					BENTONITE		
27							
28							
29							
30	0			SCREENED	SAND		
31							
32							
33							
34							
35	0						
36							
37							
38							
39	0						
40							BOH @ 40'

Project No.: 98-511-21
Well / Boring No.: MW-17

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
0							
1	0		CONTINUOUS	SOLID	GROUT		Pavement
2						CL	Sandy Lean CLAY: dark gray; 80% clay, 20% very fine sand; low estimated permeability; no odor
3							
4							
5							
6	0					CL/SC	Sandy Lean CLAY/Clayey SAND: gray; 50% clay, 50% very fine sand; very low estimated permeability; no odor
7							
8							Saturated below 7 feet
9							
10						CL	Grades to Sandy Lean CLAY: gray/brown; 70% clay, 30% very fine sand; very low estimated permeability; no odor
11	0						No recovery at 10-15'
12							
13							
14							
15							
16	0					CL	Sandy Lean CLAY: gray/brown; 70% clay, 30% very fine sand; very low estimated permeability; no odor
17						SW/SC	Well-graded SAND with Clay and Gravel: Brown; dry; 15% clay, 70% fine sand, 15% gravel (small, rounded); moderate estimated permeability
18						CL	Lean CLAY with Sand: gray/brown; 80% clay, 20% very fine sand; very low estimated permeability; moderate hydrocarbon odor
19							
20	136						

Logged by: D. Hazard
Drilling company: RSI
Drill date: 4/4/05
Installation method: sonic
Sampler type: 4"
Auger size: 6"
Casing: 2"

Grout interval: 0-26'
Bentonite seal interval: 26-29'
Sand interval: 29-40'
Screened interval: 30-40'
Depth to water:

Project No.: 98-511-21
Well / Boring No.: MW-17

Depth (feet)	OVM data (ppm)	Sample interval	Recovery	Casing type	Annular material	ASTM symbol	Description
20	0		CONTINUOUS	SOLID	GROUT	SC	Clayey SAND: gray; 30% clay, 70% fine to very fine sand; low estimated permeability; no odor
21							
22						SW	Well-Graded SAND with Gravel: brown; saturated; 65% fine to coarse sand 35% gravel; high estimated permeability; no odor
23							
24							
25							
26					BENTONITE		
27							
28							
29							
30	0			SCREENED	SAND		
31							
32							Grades to:
33						SW	Well-Graded SAND with Gravel: brown/gray; saturated; 95% fine to coarse sand, 5% gravel; high estimated permeability; no odor
34							
35							
36							
37							
38							
39	0					SP	Well-graded SAND w/ Gravel: Brown; 90% fine-coarse sand, 10% gravel, semi-consolidated; high estimated permeability; no odor; BOH @ 40'
40							

APPENDIX E

CHAIN OF CUSTODY AND LABORATORY ANALYTICAL REPORT

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
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May 27, 2005

Jim Green, Project Manager
ECM Group
P.O. Box 802
Benicia, CA 94510

Dear Mr. Green:

Included are the results from the testing of material submitted on May 11, 2005 from the Bennett Valley, 98-511-21, F&BI 505103 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Morrow

Charlene Morrow
Chemist

Enclosures
ECM0527R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 11, 2005 by Friedman & Bruya, Inc. from the ECM Group Bennett Valley, 98-511-21, F&BI 505103 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	ECM Group
505103-01	MW-15d35
505103-02	MW-15d65
505103-03	MW-15d88
505103-04	MW-15d145
505103-05	MW-16
505103-06	MW-17

Samples MW-16 and MW-17 were analyzed for TPHG one day out of holding time. All other quality control requirements were acceptable.

Date of Report: 05/27/05
Date Received: 05/11/05
Project: Bennett Valley, 98-511-21, F&BI 505103
Date Extracted: 05/18/05
Date Analyzed: 05/18/05 and 05/19/05

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING EPA METHOD 8015M

Results Reported as µg/L (ppb)

Sample ID Laboratory ID	Gasoline Range (C_6-C_{10})	Surrogate (% Recovery) (Limit 52-150)
MW-15d35 d 505103-01	110,000	105
MW-15d65 505103-02	920	107
MW-15d88 505103-03	3,400	108
MW-15d145 d 505103-04	100,000	104
MW-16 505103-05	<100	105
MW-17 505103-06	<100	104
Method Blank	<100	105

d - The sample was diluted.

Date of Report: 05/27/05
Date Received: 05/11/05
Project: Bennett Valley, 98-511-21, F&BI 505103
Date Extracted: 05/11/05
Date Analyzed: 05/18/05

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING EPA METHOD 8015M
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Surrogate (% Recovery) (Limit 68-143)
MW-15d35 d 505103-01	250,000	91
MW-15d65 505103-02	<50	103
MW-15d88 505103-03	<50	112
MW-15d145 d 505103-04	230,000	110
MW-16 505103-05	<50	119
MW-17 505103-06	<50	86
Method Blank	<50	83

d - The sample was diluted.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-15d35	Client:	ECM Group
Date Received:	05/11/05	Project:	98-511-21, F&BI 505103
Date Extracted:	05/12/05	Lab ID:	505103-01 1/10
Date Analyzed:	05/13/05	Data File:	051245.D
Matrix:	water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	106	50	150
1,2-Dichloroethane-d4	125	50	150
Toluene-d8	93	50	150
4-Bromofluorobenzene	131	50	150

Compounds:	Concentration ug/L (ppb)
Ethanol	<10,000
t-Butyl alcohol (TBA)	2,100
Methyl t-butyl ether (MTBE)	18,000 ve
Ethyl t-butyl ether (ETBE)	5
Diisopropyl ether (DIPE)	<5
t-Amyl methyl ether (TAME)	59
Benzene	13,000 ve
Toluene	13,000 ve
Ethylbenzene	1,000
m,p-Xylene	3,400 ve
o-Xylene	2,100

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-15d35	Client:	ECM Group
Date Received:	05/11/05	Project:	98-511-21, F&BI 505103
Date Extracted:	05/12/05	Lab ID:	505103-01 1/100
Date Analyzed:	05/13/05	Data File:	051234.D
Matrix:	water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	106	50	150
1,2-Dichloroethane-d4	130	50	150
Toluene-d8	95	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	22,000
Benzene	21,000
Toluene	19,000
m,p-Xylene	3,600

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-15d65	Client:	ECM Group
Date Received:	05/11/05	Project:	98-511-21, F&BI 505103
Date Extracted:	05/12/05	Lab ID:	505103-02
Date Analyzed:	05/13/05	Data File:	051240.D
Matrix:	water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	116	50	150
1,2-Dichloroethane-d4	137	50	150
Toluene-d8	95	50	150

Compounds:	Concentration ug/L (ppb)
Ethanol	<1,000
t-Butyl alcohol (TBA)	7
Methyl t-butyl ether (MTBE)	59
Ethyl t-butyl ether (ETBE)	<0.5
Diisopropyl ether (DIPE)	<0.5
t-Amyl methyl ether (TAME)	0.6
Benzene	190
Toluene	140
Ethylbenzene	9.2
m,p-Xylene	30
o-Xylene	18

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-15d88	Client:	ECM Group
Date Received:	05/11/05	Project:	98-511-21, F&BI 505103
Date Extracted:	05/12/05	Lab ID:	505103-03
Date Analyzed:	05/13/05	Data File:	051243.D
Matrix:	water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	116	50	150
1,2-Dichloroethane-d4	135	50	150
Toluene-d8	98	50	150

Compounds:	Concentration ug/L (ppb)
Ethanol	<1,000
t-Butyl alcohol (TBA)	<5
Methyl t-butyl ether (MTBE)	7.3
Ethyl t-butyl ether (ETBE)	<0.5
Diisopropyl ether (DIPE)	<0.5
t-Amyl methyl ether (TAME)	0.6
Benzene	500 ve
Toluene	640 ve
Ethylbenzene	43
m,p-Xylene	150
o-Xylene	60

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-15d88	Client:	ECM Group
Date Received:	05/11/05	Project:	98-511-21, F&BI 505103
Date Extracted:	05/12/05	Lab ID:	505103-03 1/100
Date Analyzed:	05/13/05	Data File:	051236.D
Matrix:	water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	121	50	150
1,2-Dichloroethane-d4	147	50	150
Toluene-d8	113	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	580
Toluene	780

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-15d145	Client:	ECM Group
Date Received:	05/11/05	Project:	98-511-21, F&BI 505103
Date Extracted:	05/12/05	Lab ID:	505103-04 1/10
Date Analyzed:	05/13/05	Data File:	051246.D
Matrix:	water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	106	50	150
1,2-Dichloroethane-d4	149	50	150
Toluene-d8	96	50	150

Compounds:	Concentration ug/L (ppb)
Ethanol	<10,000
t-Butyl alcohol (TBA)	2,100
Methyl t-butyl ether (MTBE)	16,000 ve
Ethyl t-butyl ether (ETBE)	<5
Diisopropyl ether (DIPE)	<5
t-Amyl methyl ether (TAME)	52
Benzene	12,000 ve
Toluene	12,000 ve
Ethylbenzene	920
m,p-Xylene	3,000 ve
o-Xylene	1,800

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-15d145	Client:	ECM Group
Date Received:	05/11/05	Project:	98-511-21, F&BI 505103
Date Extracted:	05/12/05	Lab ID:	505103-04 1/100
Date Analyzed:	05/13/05	Data File:	051237.D
Matrix:	water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	114	50	150
1,2-Dichloroethane-d4	138	50	150
Toluene-d8	98	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	19,000
Benzene	20,000
Toluene	18,000
m,p-Xylene	3,400

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution.

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-16	Client:	ECM Group
Date Received:	05/11/05	Project:	98-511-21, F&BI 505103
Date Extracted:	05/12/05	Lab ID:	505103-05
Date Analyzed:	05/13/05	Data File:	051241.D
Matrix:	water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	118	50	150
1,2-Dichloroethane-d4	145	50	150
Toluene-d8	108	50	150

Compounds:	Concentration ug/L (ppb)
Ethanol	<1,000
t-Butyl alcohol (TBA)	51
Methyl t-butyl ether (MTBE)	120
Ethyl t-butyl ether (ETBE)	<0.5
Diisopropyl ether (DIPE)	<0.5
t-Amyl methyl ether (TAME)	0.6
Benzene	1.1
Toluene	1.0
Ethylbenzene	1.0
m,p-Xylene	3.1
o-Xylene	1.1

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-17	Client:	ECM Group
Date Received:	05/11/05	Project:	98-511-21, F&BI 505103
Date Extracted:	05/12/05	Lab ID:	505103-06
Date Analyzed:	05/13/05	Data File:	051242.D
Matrix:	water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	125	50	150
1,2-Dichloroethane-d4	145	50	150
Toluene-d8	111	50	150

Compounds:	Concentration ug/L (ppb)
Ethanol	<1,000
t-Butyl alcohol (TBA)	<5
Methyl t-butyl ether (MTBE)	32
Ethyl t-butyl ether (ETBE)	<0.5
Diisopropyl ether (DIPE)	<0.5
t-Amyl methyl ether (TAME)	<0.5
Benzene	0.6
Toluene	0.7
Ethylbenzene	0.9
m,p-Xylene	2.8
o-Xylene	0.9

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	ECM Group
Date Received:	Not Applicable	Project:	98-511-21, F&BI 505103
Date Extracted:	05/12/05	Lab ID:	05-630 mb
Date Analyzed:	05/13/05	Data File:	051227.D
Matrix:	water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	122	50	150
1,2-Dichloroethane-d4	142	50	150
Toluene-d8	111	50	150

Compounds:	Concentration ug/L (ppb)
Ethanol	<1,000
t-Butyl alcohol (TBA)	<5
Methyl t-butyl ether (MTBE)	<0.5
Ethyl t-butyl ether (ETBE)	<0.5
Diisopropyl ether (DIPE)	<0.5
t-Amyl methyl ether (TAME)	<0.5
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
m,p-Xylene	<1
o-Xylene	<0.5

Date of Report: 05/27/05
Date Received: 05/11/05
Project: Bennett Valley, 98-511-21, F&BI 505103

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING EPA METHOD 8015M

Laboratory Code: 505179-25 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	µg/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	µg/L (ppb)	1,000	98	66-124

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/27/05
Date Received: 05/11/05
Project: Bennett Valley, 98-511-21, F&BI 505103

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING EPA METHOD 8015M

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel	µg/L (ppb)	2,500	108	114	68-144	5

Date of Report: 05/27/05
Date Received: 05/11/05
Project: Bennett Valley, 98-511-21, F&BI 505103

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260B SIM

Laboratory Code: 505104-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Ethanol	µg/L (ppb)	<1,000	<1,000	nm
t-Butyl alcohol (TBA)	µg/L (ppb)	<200	<200	nm
Methyl t-butyl ether (MTBE)	µg/L (ppb)	<0.5	<0.5	nm
Diisopropyl ether (DIPE)	µg/L (ppb)	<0.5	<0.5	nm
Ethyl t-butyl ether (ETBE)	µg/L (ppb)	<0.5	<0.5	nm
t-Amyl methyl ether (TAME)	µg/L (ppb)	<0.5	<0.5	nm
Benzene	µg/L (ppb)	<0.5	<0.5	nm
Toluene	µg/L (ppb)	<0.5	<0.5	nm

Laboratory Code: 505104-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Ethanol	µg/L (ppb)	2,500	<1,000	91	50-150
t-Butyl alcohol (TBA)	µg/L (ppb)	250	<200	91	77-133
Methyl t-butyl ether (MTBE)	µg/L (ppb)	50	<0.5	100	65-130
Diisopropyl ether (DIPE)	µg/L (ppb)	50	<0.5	108	62-130
Ethyl t-butyl ether (ETBE)	µg/L (ppb)	50	<0.5	105	60-133
t-Amyl methyl ether (TAME)	µg/L (ppb)	50	<0.5	103	63-136
1,2-Dichloroethane (EDC)	µg/L (ppb)	50	<0.5	116	59-149
Benzene	µg/L (ppb)	50	<0.5	100	55-125
Toluene	µg/L (ppb)	50	<0.5	104	62-130

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Ethanol	µg/L (ppb)	500	89	70-130
t-Butyl alcohol (TBA)	µg/L (ppb)	50	90	69-149
Methyl t-butyl ether (MTBE)	µg/L (ppb)	10	93	78-128
Diisopropyl ether (DIPE)	µg/L (ppb)	10	100	74-139
Ethyl t-butyl ether (ETBE)	µg/L (ppb)	10	97	75-134
t-Amyl methyl ether (TAME)	µg/L (ppb)	10	95	75-124
Benzene	µg/L (ppb)	10	96	76-122
Toluene	µg/L (ppb)	10	103	78-128

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

CHAIN OF CUSTODY

Send Report To: JIM GREEN
Company: ECM Group
Address: PO Box 802
City, State, ZIP: Benicia, CA 94510
Phone #: (707) 751-0655 Fax #: (707) 751-0653

SAMPLER'S SIGNATURE:

PROJECT NAME/NO.: BENNETT VALLEY 98-511-21
PO #:

REMARKS: SUBMIT AS EDF

Page # 1 of 1

TURNAROUND TIME
- [X] Standard (2 Weeks)
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8260B	Fuel Oxygenates	Lead Scavengers	Notes
MW-15d 35		5/4/05	10:25	W	6	X	X	X	X		
MW-15d 65		5/4/05	10:40	W	6	X	X	X	X		
MW-15d 88		5/4/05	11:05	W	6	X	X	X	X		
MW-15d 145		5/4/05	11:35	W	6	X	X	X	X		
MW-16		5/3/05	13:00	W	6	X	X	X	X		
MW-17		5/3/05	12:00	W	6	X	X	X	X		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	MICHAEL S. JACKSON	ECM GROUP	5/4/05	
Received by:				
Relinquished by:				
Received by:				

APPENDIX G

WELL DEVELOPMENT AND GROUND WATER SAMPLING FIELD DATA SHEETS

Start Time = 10:50 AM
used peristaltic pump

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: 99-511-21
By: Jim G & Jeff S

Well ID: MW-15 Depth ~40 ft Channel 1
Date: 4/19/05

Total minutes elapsed	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp °C	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start: 10:50 0.00	6.81			X	X						
Stop: 3.5				X	X		.5	18.1	5.22	3400	brown, gray, lots of sediment/odor
Start: 11.05				X	X		1.0	17.8	5.22	2990	
Stop: 16.32	(total minutes)			X	X		2	17	5.21	2930	
Start: 19.28				X	X		2.5	17.9	5.22	3020	
Stop: 23.05					X		3	17.4	5.3	2970	
Start: 26					X		3.5	17.3	5.28	2950	
Stop:											Initial Depth = 6.81' Total Depth = 38.52'
Start:											Initial Height of water column 31.71 ft
Stop:											Initial Casing Volume = 0.3 Gal
Start:											Subsequent casing Volume (based on 10' Length
Stop:											Screen) = 0.1 gal

Total 'volumes' removed = 33 Volumes

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: 6.81
Depth to Water After Development: 6.81
Sounded Depth Before Development: 40
Sounded Depth After Development: 40

Development Method: _____
Total Pumping Time (min): _____
Total Amount Excavated (gals): 3.5

Average Pumping Rate (gpm): _____
Pumping Rate Range (gpm): _____
Total H20 Injected (gals): _____

Start Time = 11:20

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: 98-511-21
By: Jim Green & Jeff Summers

Well ID: MW-15 Depth 40' Channel 2
Date: 4/19/05

Total Elapsed Time / Time	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp. (F)	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start: 0.00	6.81				X		0				
Stop: 3.0					X		0.5	17.2	5.43	2960	gray, sediment, odor
Start: 7.1							1.0	18	5.34	2920	
Stop: 19							1.5	18.1	5.43	2930	
Start: 11							2.0	17.9	5.34	2890	
Stop: 13.30							2.5	17.5	5.27	2920	
Start: 17:30							3.0	17.4	5.45	2930	Init. Depth = 6.81 Total Depth = 38.52
Stop: 20'30							3.5	17.6	5.46	2970	Init. Height of Column = 31.71 ft
Start:											Init. Casing Volume = 0.5 Gal
Stop:											Subsequent casing Volume = 0.1 gal
Start:											
Stop:											Total 'Volumns' removed = 33 'Volumns'

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: 6.81
Depth to Water After Development: 6.81
Sounded Depth Before Development: 40
Sounded Depth After Development: 40

Development Method: _____
Total Pumping Time (min): _____
Total Amount Excavated (gals): 3.5

Average Pumping Rate (gpm): _____
Pumping Rate Range (gpm): _____
Total H20 Injected (gals): _____

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: Bennett Valley 98-511-21
By: Jeff Summers & Jim Green

Well ID: MW-15 chemical 3 page 1
Date: 4/19/16

Time	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp. (F)	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start: 313	6.96				X						
Stop: 317					X		0.5	23.2	7.78	790	Gray, sediments.
Start: 317					X						
Stop: 321					X		0.5	21.2	7.83	747	Gray, fine Sediment.
Start: 321					X						
Stop: 325					X		0.5	20.7	7.70	755	Gray, fine Sediment
Start: 325					X						
Stop: 329					X		0.5	20.7	7.73	736	light Brown, very little sediments
Start: 329					X						
Stop: 334					X		0.5	20.6	7.76	758	very light Brown, no sediments
Start: 334					X						
Stop: 340					X		0.5	20.7	7.80	760	Clear, no sediments

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: 6.96
Depth to Water After Development: _____
Sounded Depth Before Development: 20.00
Sounded Depth After Development: _____

Development Method: _____
Total Pumping Time (min): _____
Total Amount Excavated (gals): _____

Average Pumping Rate (gpm): _____
Pumping Rate Range (gpm): _____
Total H20 Injected (gals): _____

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: _____

By: _____

Well ID: MW-15, channel 3 page 2

Date: 4/19/05

Time	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp. (F)	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start:	340				X						
Stop:	345				X		0.5	20.6	7.78	720	Clear, no sediment
Start:	345				X						
Stop:	351				X		0.5	21.2	7.67	735	Clear, no sediment
Start:											
Stop:											
Start:											
Stop:											
Start:											
Stop:											
Start:											
Stop:											

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: 6.86

Depth to Water After Development: _____

Sounded Depth Before Development: 76.0

Sounded Depth After Development: _____

Development Method: _____

Total Pumping Time (min): 33 min

Total Amount Excavated (gals): 1 gal

Average Pumping Rate (gpm): .12 gpm

Pumping Rate Range (gpm): _____

Total H20 Injected (gals): _____

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: Bennett Valley 90511-21 Well ID: MW-15 chamber 4 paged

By: Jeff Summers Date: 4/19/05

Time	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp. (F) C°	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start: 401	6.96	—			X						
Stop: 407					X		0.5	23.5	7.56	730	gray, fine sediment.
Start: 407					X						
Stop: 413					X		1.0	21.9	7.56	729	Clear, no sediment
Start: 413					X						
Stop: 419					X		0.5	21.1	7.59	746	Clear, no sediment
Start: 419					X						
Stop: 425					X		0.5	21.2	7.55	733	Clear, no sediment
Start: 425					X						
Stop: 431					X		0.5	21.9	7.70	737	Clear, no sediment
Start: 431					X						
Stop:					X		0.5	21.2	7.57	733	Clear, no sediment

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: 6.96

Depth to Water After Development: _____

Sounded Depth Before Development: _____

Sounded Depth After Development: _____

Development Method: _____

Total Pumping Time (min): 30

Total Amount Excavated (gals): 3.5

Average Pumping Rate (gpm): _____

Pumping Rate Range (gpm): 1 gpm

Total H20 Injected (gals): _____

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: Bennett Valley 99511-21
By: Jeff Summers

Well ID: MW-15 chamber 5
Date: 4/9/03

Time	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp. (F)	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start: 440	7.13				X						
Stop: 456					X		0.5	24.4	7.65	1000	dark gray, fine sediment.
Start: 456					X						
Stop: 502					X		1.0	21.6	7.67	855	light gray, fine sediment.
Start: 502					X						
Stop: 513					X		1.0	22.2	7.58	743	light brown, fine sediment
Start: 513					X						
Stop: 525					X		1.0	21.0	7.58	730	Clear/cloudy, very little sediment
Start: 525					X						
Stop: 534					X		0.5	21.1	7.44	703	clear/cloudy, very little sediment
Start:											
Stop:											

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: 7.13
Depth to Water After Development: ____
Sounded Depth Before Development: 42.80
Sounded Depth After Development: ____

Development Method: ____
Total Pumping Time (min): 51
Total Amount Excavated (gals): 4

Average Pumping Rate (gpm): .07 gpm
Pumping Rate Range (gpm): ____
Total H20 Injected (gals): ____

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: Brannt Valley 98511-21

By: Jeff Summers

Well ID: MW-15 channel 6

Date: 4/19/05

Time	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp. (F)	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start: 540	6.93				x						
Stop: 544					x		0.5	21.9	6.43	2940	light gray/cloudy, fine sediment
Start: 544					x						
Stop: 548					x		1.0	21.2	6.47	2970	light brown, fine sediment
Start: 548					x						
Stop: 555					x		1.0	21.9	6.48	3020	cloudy/light brown, very fine sediment
Start: 555					x						
Stop: 604					x		1.0	21.5	6.45	2470	cloudy/light brown, very fine sediment
Start: 604					x						
Stop: 615					x		1.0	20.6	6.46	3010	clear/cloudy light gray, very fine sediment
Start: 615					x						
Stop: 630					x		1.0	20.9	6.49	2990	cloudy, no sediment

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: 6.93

Depth to Water After Development:

Sounded Depth Before Development: 150

Sounded Depth After Development:

Development Method:

Total Pumping Time (min):

Total Amount Excavated (gals): 5.5

Average Pumping Rate (gpm):

Pumping Rate Range (gpm):

Total H20 Injected (gals):

Column Height = 40 - 5.56 ≈ 34.44'
Initial Casing Volume = 34.44 x 0.163 ≈ 5.6 gal
Subsequent Casing Volume = 1.63 gal
(based on 10' screen)
10 Volumes = 5.6 + (9 x 1.63) ≈ 20.5 gal

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: 98-511-21 Bennett Valley
By: J Gran & J Summers

Well ID: MW-16 Page 1
Date: 4/19/05

Time	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp. (F)	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start: 12:50	5.56	—	X	X							
Stop: 1:01							4	22.0	6.07	1100	light brown, sediment.
Start: 1:02			X								
Stop: 1:10	6.76										
Start: 1:11				X							
Stop: 123							4	21.9	6.34	748	light brown, fine sediment.
Start: 125			X								
Stop: 132	7.0										
Start: 1:39				X			4	21.4	6.2	1007	
Stop: 1:54											
Start: 1:55			X								
Stop: 2:01	7:22										

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: 5.56
Depth to Water After Development: 9.15
Sounded Depth Before Development: 40.30
Sounded Depth After Development: 40.30

Development Method: Surge & Bail
Total Pumping Time (min): 49
Total Amount Excavated (gals): 21

Average Pumping Rate (gpm): —
Pumping Rate Range (gpm): —
Total H20 Injected (gals): —

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: 98-511-21 Bennett Valley
By: J Green & Jeff Summers

Well ID: MW-16 Page 2
Date: 4/19/05

Time	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp. (F)	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start: 209				X							
Stop: 215				X			5	21.4	6.29	1166	
Start: 216			X								
Stop: 222	9.10		X								
Start: 2:25				X			4				
Stop: 2:30	9.15										
Start:											
Stop:											
Start:											
Stop:											
Start:											
Stop:											

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: _____
Depth to Water After Development: _____
Sounded Depth Before Development: _____
Sounded Depth After Development: _____

Development Method: _____
Total Pumping Time (min): _____
Total Amount Excavated (gals): _____

Average Pumping Rate (gpm): _____
Pumping Rate Range (gpm): _____
Total H20 Injected (gals): _____

33.64 casing vol . .163 = 5.48 gal

10ft screen . .163 = 1.63 gal

1.63 · 10 Volumes = 16.30 gal total gal = 22 gal

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: 98-511-21 Bennett Valley

By: JSummers

Well ID: MW17 page 1

Date: 4/20

Time	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp. (F)	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start: 950	6.36	—		X							
Stop: 10:04				X			5	20.1	7.12	991	Brown, heavy Sediment
Start: 10 09			X								
Stop: 1016	6.78		X								
Start: 1023				X							
Stop: 1034				X			5	19.6	7.14	970	brown heavy Sediment
Start: 1038			X								
Stop: 1047	6.99		X								
Start: 1050				X							
Stop: 1103				X			5	20.5	7.06	957	brown heavy Sediment
Start: 1105			X								
Stop: 1114	7.03		X								

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: 6.36

Depth to Water After Development: _____

Sounded Depth Before Development: 46.0

Sounded Depth After Development: _____

Development Method: _____

Total Pumping Time (min): _____

Total Amount Excavated (gals): 25

Average Pumping Rate (gpm): _____

Pumping Rate Range (gpm): _____

Total H20 Injected (gals): _____

WELL DEVELOPMENT / WATER MONITORING DATA

PROJECT NAME & NUMBER: _____ Well ID: MW-17 page 2

By: _____ Date: _____

Time	Depth to Water (ft)	Depth to Product (ft)	Surged	Bailed	Pumped		Gallons removed	Temp. (F)	pH	EC (umhos)	Comments: (color, odor, product, est flow rate)
Start: 1121					X		10	20.1	7.66	1025	light brown heavy sediment
Stop: 1125	6.95	—			X						
Start:											
Stop:											
Start:											
Stop:											
Start:											
Stop:											
Start:											
Stop:											
Start:											
Stop:											

WELL DEVELOPMENT SUMMARY

Depth to Water Before Development: 6.36

Depth to Water After Development: 6.85

Sounded Depth Before Development: 40.0

Sounded Depth After Development: 40.0

Development Method: _____

Total Pumping Time (min): _____

Total Amount Excavated (gals): _____

Average Pumping Rate (gpm): _____

Pumping Rate Range (gpm): _____

Total H20 Injected (gals): _____

WATER LEVEL & PRODUCT MEASUREMENTS

ECM group

PROJECT NAME & NUMBER: 98-511-21 BENNETT VALLEY

DATE: 5/

BY: M. JACKSON

WELL ID	TIME MEASURED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH	COMMENTS: (well condition, odor, etc.)
MW-15 d 35			8.02	40.00	MULTI-LEVEL WELL PORT-1
MW-15 d 65			7.68	70.00	MULTI-LEVEL WELL PORT-3
MW-15 d 88			7.95	93.00	MULTI-LEVEL WELL PORT-5
MW-15 d 145			8.03	150.00	MULTI-LEVEL WELL PORT-6
MW-16			7.04	44.45	2"
MW-17			6.98	40.10	2"

WATER SAMPLING DATA

Job Name BENNETT VALLEY Job Number 98-511-21

Well Number MW-15d35 Date 5/4/05 Time

Well Diameter MULTI-LEVEL Well Depth (spec.) Well Depth (sounded) 40.00

Depth to Water (static) 8.02 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_3" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft

Initial height of water in casing 31.98 Volume 0.31 gallons

Total to be evacuated = 3 x Initial Volume 0.95 gallons

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After _____ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	65.6	65.6	65.6				
pH	6.28	6.28	6.25				
EC (umhos/cm)	2165	2129	2216				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

10:25

WATER SAMPLING DATA

Job Name BENNETT VALLEY Job Number 98-511-21

Well Number MW-15d65 Date 5/4/05 Time

Well Diameter MULTI-LEVEL Well Depth (spec.) Well Depth (sounded) 70.00

Depth to Water (static) 7.68 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 62.32 Volume 0.62 gallons

Total to be evacuated = 3 x Initial Volume 1.86 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_3" casing = 0.163 gal/ft
V_4" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After ____ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	65.0	65.4	64.6				
pH	6.89	7.14	7.21				
EC (umhos/cm)	712	734	703				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

10:40

WATER SAMPLING DATA

Job Name BENNETT VALLEY Job Number 98-511-21

Well Number MW-15d 88 Date 5/4/05 Time

Well Diameter MULTI-LEVEL Well Depth (spec.) Well Depth (sounded) 93.00

Depth to Water (static) 7.95 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 85.05 Volume 0.85 gallons

Total to be evacuated = 3 x Initial Volume 2.55 gallons

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_3" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{5.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft

Pumped or Bailed Dry? ___Yes X No After ___ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	65.1	65.9	65.1				
pH	6.54	6.69	6.89				
EC (umhos/cm)	590	841	715				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

11:05

WATER SAMPLING DATA

Job Name BENNETT VALLEY Job Number 98-511-21

Well Number MW-16d 145 Date 5/4/05 Time _____

Well Diameter _____ Well Depth (spec.) _____ Well Depth (sounded) 150.00

Depth to Water (static) 8.03 TOC elev. _____

G.W. Elev. _____ Maximum Drawdown Limit (if applicable) _____

Initial height of water in casing 141.97 Volume 1.41 gallons

Total to be evacuated = 3 x Initial Volume 4.25 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_3" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_5" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After _____ gallons Recovery Rate _____

Water color _____ Odor _____

Description of sediments or material in sample: _____

Additional Comments: _____

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	64.9	66.2	65.9				
pH	6.30	6.26	6.27				
EC (umhos/cm)	2080	2136	2138				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

11:35

WATER SAMPLING DATA

Job Name BENNETT VALLEY Job Number 98-511-21

Well Number MW-17 Date 5/3/05 Time

Well Diameter 2" Well Depth (spec.) Well Depth (sounded) 40.10

Depth to Water (static) 6.98 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 33.12 Volume 5.39 gallons

Total to be evacuated = 3 x Initial Volume 16.19 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_4" casing = 0.367 gal/ft
V_6" casing = 0.653 gal/ft
V_{12}" casing = 0.826 gal/ft
V_8" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After ___ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	69.2	67.2	66.8				
pH	6.67	6.69	6.67				
EC (umhos/cm)	950	927	928				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

13:00

WATER SAMPLING DATA

Job Name BENNETT VALLEY Job Number 98-51F21

Well Number MW-16 Date 5/3/05 Time

Well Diameter 2" Well Depth (spec.) Well Depth (sounded) 46.45

Depth to Water (static) 7.04 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 33.41 Volume 5.44 gallons

Total to be evacuated = 3 x Initial Volume 16.33 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_3" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After ____ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	68.2	66.1	65.7				
pH	6.60	6.57	6.55				
EC (umhos/cm)	1132	1090	1086				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

12:00